PROJECT NARRATIVE

Property Description

The subject lot is located on the north side of Elm Street, approximately 2,000-feet to the west of Chandler Street. It is 13.4051-acres in total size and it staddles the municipal boundary line with the Town of Boscawen. 12.5472-aces of the parcel is located within the City of Concord and is known as Concord Map 15P Lot 26-1. The remaining 0.8579-acres is located in the Town of Boscawen and is known as Boscawen Tax map 83 Lot 63-9. The portion of the lot located within the City of Concord (Map 15 P Lot 16-1) is the subject of the proposed subdivision application, and is referred to herein as the subject parcel.

The subject parcel has over 800-feet of frontage on Elm Street and it is split-zoned, with the eastern portion being location within the RM – Medium Density Residential Zoning District and the western potion being located within the RO – Open Space Residential Zoning District in the City of Concord. The zoning district boundary line falls along the eastern side of a small pond that is entirely located within the subject parcel. The RM-zoned portion of the property to the east of the pond exists as an open meadow with very flat terrain and well-drained soils, making it very suitable for development. The RO-zoned portion of the property is wooded and contains the pond, adjacent wetland areas, and is predominantly comprised of steep slopes, making it much less suitable for development. Aside from a very small cemetery that lies adjacent to Elm Street near the pond, the subject parcel is entirely undeveloped.

Adjacent land uses include existing single-family houses along the Elm Street corridor to the east, south and west in Concord. To the north, the parcel is adjacent to undeveloped parcels located within the Town of Boscawen's Agricultural-Residential zoning district. The parcel lies outside of the current Urban Growth Boundary.

Elm Street is classified as a Rural Collector in the current City of Concord Master Plan and has a posted speed limit of 35-mph. It is a two-lane road with double-yellow center striping and one-foot wide paved shoulders with a painted fog line. Elm Street does not contain any curb or any sidewalks in the vicinity of the subject parcel. The nearest sidewalk lies approximately 0.5 miles to the east towards downtown Penacook.

Municipal water and sewer mains are available in Elm Street but terminate near the eastern edge of the subject parcel such that they do not currently extend along the parcel's frontage. Overhead private utilities and power powers exist on the north side of Elm Street and are available to serve the subject parcel.

Project Description

The proposed project involves a new residential subdivision that will create 5 new single-family house lots and leave a large portion of the parent tract intact for future development. A new municipal cul-de-sac will be constructed off the north side of Elm Street to provide access and utilities to the 5 new lots.

Water and Sewer mains will be extended within Elm Street to the proposed intersection with the new cul-de-sac. All driveways to the new lots will be accessed off the new cul-de-sac such that not new driveways will directly access Elm Street.

The proposed cul-de-sac is approximately 300-feet long and is designed to comply with the typical City detail for a Residential Rural Cluster Street. It will have a 26-foot pavement width with vertical granite curb on both sides. No sidewalk is proposed since there is not an existing sidewalk on Elm Street. The new street will have a closed drainage system and two separate onsite stormwater management basins located within municipal drainage easements. Underground private utilities will be extended within the street right-of-way from the overhead utilities in Elm Street. All new roadway improvements will be constructed per City details and specifications. A future right-of-way easement will be dedicated off the end of the cul-de-sac that extends to the parent tract. This will allow for future access and future extension of utilities to the remaining parcel.

The five new lots will all meet the minimum size criteria of the Zoning Ordinance for single-family lots with sewer in the RM-district. The minimum lot size is 12,500-sf with 100-feet of frontage.

FILE: G:_PROJECTS\25019\dwg\25019_Exhibits.dwg BY: Jamie DATE: 17 Jun 2025 - 2:43pm

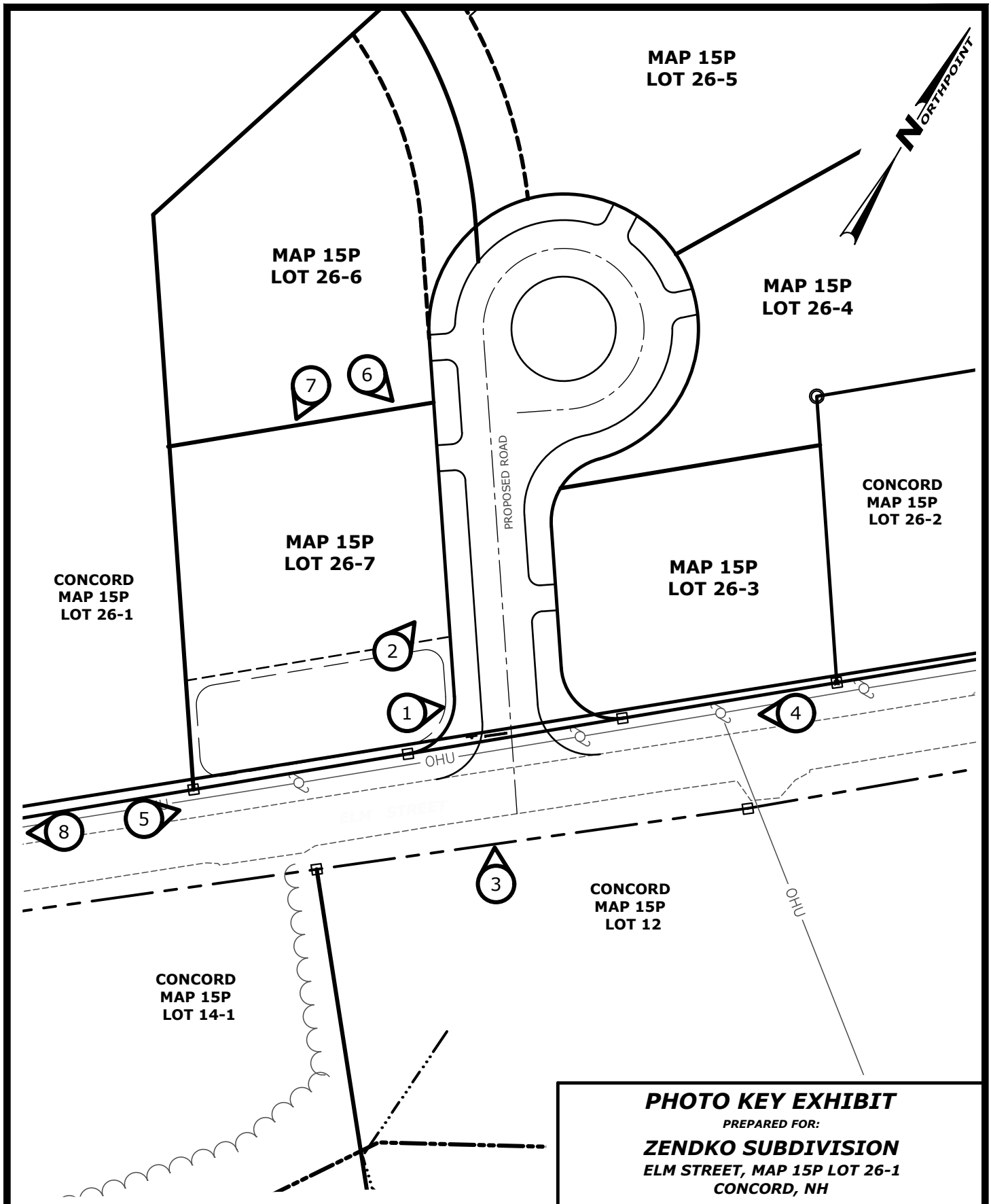

PHOTO KEY EXHIBIT

PREPARED FOR:

ZENDKO SUBDIVISION

ELM STREET, MAP 15P LOT 26-1
CONCORD, NH

NORTHPOINT ENGINEERING, LLC
Civil Engineering ◢ Land Planning ◢ Construction Services

119 Storrs St, Ste 201
Concord, NH 03301
Tel 603-226-1166
Fax 603-226-1160
www.northpointeng.com

SCALE: 1" = 60'	DATE: JUN, 2025
PROJ.: 25019	SHEET: 1 OF 1

Picture 1 : Looking East on Elm St with sewer drain in the foreground.

Picture 2: Looking northeast across the field on Elm St.

Picture 3: Looking at the site directly across the street.

Picture 4: Closer to Lot 26-2 looking west.

Picture 5: Further down Elm St looking east.

Picture 6: In the field looking southeast towards Elm St.

Picture 7: Looking southwest towards Elm St.

Picture 8: Further down Elm St looking west.

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Planning Division

Waiver Request Form – Site Plan Regulations

Instructions:

1. List the section for which the waiver is being requested, along with a brief explanation of the request.
2. Explain how the waiver request complies with each criterion.

Section 36.08 *Waivers: Where the Planning Board finds that extraordinary hardships or practical difficulties may result from strict compliance with these regulations and/or the purposes of these regulations may be served to a greater extent by an alternative proposal, it may approve waivers to these subdivision regulations so that substantial justice may be done and the public interest secured, provided that such waiver shall not have the effect of nullifying the intent and purpose of these regulations…*

Waiver from Section Section 6.03(2)(c) & 11.05 - Determination of Completeness

A waiver to allow the major site plan application to be publicly heard at the same meeting in which the determination of completeness occurs.

and further provided the Planning Board shall not approve waivers unless it shall make findings based upon the evidence presented to it in each specific case that:

(1) The granting of the waiver will not be detrimental to the public safety, health, or welfare or injurious to other property; the public hearing will be held 2 months after the application was formally submitted, consistent with the two meeting process.

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(2) *The conditions upon which the request for a waiver is based are unique to the property for which the waiver is sought and are not applicable generally to other property;* There is no benefit in this case to delay a public hearing

(3) *Because of the particular physical surroundings, shape, or topographical conditions of the specific property involved, a particular and unnecessary hardship to the owner would result, as distinguished from a mere inconvenience, if the strict letter of these regulations are carried out;* An unnecessary delay in permitting would result.

(4) *Specific circumstances relative to the subdivision or conditions of the land in such subdivision indicate that the waiver will property carry out, or not be contrary to, the spirit and intent of the regulations; and* Allowing the waiver is not be contrary to the spirit and intent of the regulation because the there has been ample time for the public to view the application.

(5) *The waiver will not in any manner vary the provisions of the Zoning Ordinance, Master Plan Reports, or Official Map.* Allowing this waiver will not distort the provisions of the Zoning Ordinance, Master Plan Reports, or Official Maps.

Finally, note if the waiver complies with RSA 674:44(III)(e)(1) or (2) below and explain how.

(1) Strict conformity would pose an unnecessary hardship to the applicant and waiver would not be contrary to the spirit and intent of the regulations

OR

(2) Specific circumstances relative to the site plan, or conditions of the land in such site plan, indicate that the waiver will properly carry out the spirit and intent of the regulations Allowing the waiver will preserve the spirit and intent of the regulation by ensuring that sufficient information and notice has been provided in order for the public hearing to occur at the same time as the determination of completeness.

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Waiver Request Form – Subdivision Regulations

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2. Explain how the waiver request complies with each criterion.

Section 35.08 *Waivers: Where the Planning Board finds that extraordinary hardships or practical difficulties may result from strict compliance with these regulations and/or the purposes of these regulations may be served to a greater extent by an alternative proposal, it may approve waivers to these subdivision regulations so that substantial justice may be done and the public interest secured, provided that such waiver shall not have the effect of nullifying the intent and purpose of these regulations.*

Waiver from Section 16.03(10) - Access and Driveways on Final Plat

A waiver from the requirement that all proposed driveways along the subdivision frontage be shown on the final recordable plan.

and further provided the Planning Board shall not approve waivers unless it shall make findings based upon the evidence presented to it in each specific case that:

(1) The granting of the waiver will not be detrimental to the public safety, health, or welfare or injurious to other property; Unnecessary to show proposed access and driveways on the final plat . This information is depicted on the Subdivision Improvement Plan sheets.

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(2) *The conditions upon which the request for a waiver is based are unique to the property for which the waiver is sought and are not applicable generally to other property;*

Unnecessary to show proposed access and driveways on the final plat .

This information is depicted on the Subdivision Improvement Plan sheets.

(3) *Because of the particular physical surroundings, shape, or topographical conditions of the specific property involved, a particular and unnecessary hardship to the owner would result, as distinguished from a mere inconvenience, if the strict letter of these regulations are carried out;*

Unnecessary to show proposed access and driveways on the final plat .

This information is depicted on the Subdivision Improvement Plan sheets.

(4) *Specific circumstances relative to the subdivision or conditions of the land in such subdivision indicate that the waiver will property carry out, or not be contrary to, the spirit and intent of the regulations; and*

Unnecessary to show proposed access and driveways on the final plat .

This information is depicted on the Subdivision Improvement Plan sheets.

(5) *The waiver will not in any manner vary the provisions of the Zoning Ordinance, Master Plan Reports, or Official Map.*

Unnecessary to show proposed access and driveways on the final plat .

This information is depicted on the Subdivision Improvement Plan sheets.

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Waiver from Section Section 6.03(2)(c) & 11.05 - Determination of Completeness

A waiver to allow the major site plan application to be publicly heard at the same meeting in which the determination of completeness occurs.

and further provided the Planning Board shall not approve waivers unless it shall make findings based upon the evidence presented to it in each specific case that:

(1) The granting of the waiver will not be detrimental to the public safety, health, or welfare or injurious to other property; the public hearing will be held 2 months after the application was formally submitted, consistent with the two meeting process.

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(2) *The conditions upon which the request for a waiver is based are unique to the property for which the waiver is sought and are not applicable generally to other property;* There is no benefit in this case to delay a public hearing

(3) *Because of the particular physical surroundings, shape, or topographical conditions of the specific property involved, a particular and unnecessary hardship to the owner would result, as distinguished from a mere inconvenience, if the strict letter of these regulations are carried out;* An unnecessary delay in permitting would result.

(4) *Specific circumstances relative to the subdivision or conditions of the land in such subdivision indicate that the waiver will property carry out, or not be contrary to, the spirit and intent of the regulations; and* Allowing the waiver is not be contrary to the spirit and intent of the regulation because the there has been ample time for the public to view the application.

(5) *The waiver will not in any manner vary the provisions of the Zoning Ordinance, Master Plan Reports, or Official Map.* Allowing this waiver will not distort the provisions of the Zoning Ordinance, Master Plan Reports, or Official Maps.

Allowing the waiver will preserve the spirit and intent of the regulation by ensuring that sufficient information and notice has been provided in order for the public hearing to occur at the same time as the determination of completeness.

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Waiver from Section Construction Standards and Details - Detail R-9 Roadway Termination - Cul-de-sac - A waiver from the requirement of the above detail to allow instead the subdivision regulations cul-de-sac size requirement as a fire truckruck turning movement detail has been added to the plan to prove the smaller size is adequate.

and further provided the Planning Board shall not approve waivers unless it shall make findings based upon the evidence presented to it in each specific case that:

(1) The granting of the waiver will not be detrimental to the public safety, health, or welfare or injurious to other property; The smaller size cul-de-sac works with the Fire truck turning template and the larger size would cause the subdivision to have significant chages.

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(2) *The conditions upon which the request for a waiver is based are unique to the property for which the waiver is sought and are not applicable generally to other property;* The smaller size cul-de-sac works with the Fire truck turning template.

(3) *Because of the particular physical surroundings, shape, or topographical conditions of the specific property involved, a particular and unnecessary hardship to the owner would result, as distinguished from a mere inconvenience, if the strict letter of these regulations are carried out;* The larger size would cause the subdivision to have significant changes.

(4) *Specific circumstances relative to the subdivision or conditions of the land in such subdivision indicate that the waiver will property carry out, or not be contrary to, the spirit and intent of the regulations; and* The larger size would cause the subdivision to have significant changes.

(5) *The waiver will not in any manner vary the provisions of the Zoning Ordinance, Master Plan Reports, or Official Map.*

Waiver request is consistent with all Regulations.

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Waiver from Section 16.03(13) - Municipal Sewer on Final Plat

A waiver from the requirement that the location, size, and invert elevations of existing and proposed sanitary and storm sewers including manholes, catch basins, and culverts be shown on the final recordable plan.

and further provided the Planning Board shall not approve waivers unless it shall make findings based upon the evidence presented to it in each specific case that:

(1) The granting of the waiver will not be detrimental to the public safety, health, or welfare or injurious to other property; Unnecessary to show municipal sewer on the final plat . This information is depicted on the Subdivision Improvement Plan sheets.

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(2) *The conditions upon which the request for a waiver is based are unique to the property for which the waiver is sought and are not applicable generally to other property;*

Unnecessary to show municipal sewer on the final plat .

This information is depicted on the Subdivision Improvement Plan sheets.

(3) *Because of the particular physical surroundings, shape, or topographical conditions of the specific property involved, a particular and unnecessary hardship to the owner would result, as distinguished from a mere inconvenience, if the strict letter of these regulations are carried out;*

Unnecessary to show municipal sewer on the final plat .

This information is depicted on the Subdivision Improvement Plan sheets.

(4) *Specific circumstances relative to the subdivision or conditions of the land in such subdivision indicate that the waiver will property carry out, or not be contrary to, the spirit and intent of the regulations; and*

Unnecessary to show municipal sewer on the final plat .

This information is depicted on the Subdivision Improvement Plan sheets.

(5) *The waiver will not in any manner vary the provisions of the Zoning Ordinance, Master Plan Reports, or Official Map.*

Unnecessary to show municipal sewer on the final plat .

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Waiver from Section Section 6.03(2)(c) & 11.05 - Determination of Completeness

A waiver to allow the major site plan application to be publicly heard at the same meeting in which the determination of completeness occurs.

and further provided the Planning Board shall not approve waivers unless it shall make findings based upon the evidence presented to it in each specific case that:

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(2) *The conditions upon which the request for a waiver is based are unique to the property for which the waiver is sought and are not applicable generally to other property;* There is no benefit in this case to delay a public hearing

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Waiver from Section Construction Standards and Details - 6.02.B - Storm Drainage Systems, Pipe Type

A waiver from the requirement that reinforced concrete pipe to be used for storm drain pipe, as we propose to use HDPE pipe instead.

and further provided the Planning Board shall not approve waivers unless it shall make findings based upon the evidence presented to it in each specific case that:

(1) The granting of the waiver will not be detrimental to the public safety, health, or welfare or injurious to other property;

HDPE is standard for storm drain pipe.

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(2) *The conditions upon which the request for a waiver is based are unique to the property for which the waiver is sought and are not applicable generally to other property;*

HDPE is standard for storm drain pipe.

(3) *Because of the particular physical surroundings, shape, or topographical conditions of the specific property involved, a particular and unnecessary hardship to the owner would result, as distinguished from a mere inconvenience, if the strict letter of these regulations are carried out;* HDPE is standard for storm drain pipe.

(4) *Specific circumstances relative to the subdivision or conditions of the land in such subdivision indicate that the waiver will property carry out, or not be contrary to, the spirit and intent of the regulations; and*

HDPE is standard for storm drain pipe.

(5) *The waiver will not in any manner vary the provisions of the Zoning Ordinance, Master Plan Reports, or Official Map.*

Waiver request is consistent with all Regulations.

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Waiver from Section 16.04(3)(b) - Drainage Calculations on Grading Plan

A waiver from the requirement that stormwater runoff calculations be shown on the Grading Plan. As is customary, all drainage calculations are provide in the separate Stormwater Management Report (i.e Drainage Report) and not on the plans.

and further provided the Planning Board shall not approve waivers unless it shall make findings based upon the evidence presented to it in each specific case that:

(1) The granting of the waiver will not be detrimental to the public safety, health, or welfare or injurious to other property;

Unnecessary to show drainage calculations on the plans .

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(2) *The conditions upon which the request for a waiver is based are unique to the property for which the waiver is sought and are not applicable generally to other property;*

Unnecessary to show drainage calculations on the plans .

(3) *Because of the particular physical surroundings, shape, or topographical conditions of the specific property involved, a particular and unnecessary hardship to the owner would result, as distinguished from a mere inconvenience, if the strict letter of these regulations are carried out;*

Unnecessary to show drainage calculations on the plans .

(4) *Specific circumstances relative to the subdivision or conditions of the land in such subdivision indicate that the waiver will property carry out, or not be contrary to, the spirit and intent of the regulations; and*

Unnecessary to show drainage calculations on the plans .

(5) *The waiver will not in any manner vary the provisions of the Zoning Ordinance, Master Plan Reports, or Official Map.*

Unnecessary to show drainage calculations on the plans .

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Waiver from Section Section 6.03(2)(c) & 11.05 - Determination of Completeness

A waiver to allow the major site plan application to be publicly heard at the same meeting in which the determination of completeness occurs.

and further provided the Planning Board shall not approve waivers unless it shall make findings based upon the evidence presented to it in each specific case that:

(1) The granting of the waiver will not be detrimental to the public safety, health, or welfare or injurious to other property; the public hearing will be held 2 months after the application was formally submitted, consistent with the two meeting process.

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(2) *The conditions upon which the request for a waiver is based are unique to the property for which the waiver is sought and are not applicable generally to other property;* There is no benefit in this case to delay a public hearing

(3) *Because of the particular physical surroundings, shape, or topographical conditions of the specific property involved, a particular and unnecessary hardship to the owner would result, as distinguished from a mere inconvenience, if the strict letter of these regulations are carried out;* An unnecessary delay in permitting would result.

(4) *Specific circumstances relative to the subdivision or conditions of the land in such subdivision indicate that the waiver will property carry out, or not be contrary to, the spirit and intent of the regulations; and* Allowing the waiver is not be contrary to the spirit and intent of the regulation because the there has been ample time for the public to view the application.

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Waiver from Section 16.04(7) - Landscape Architect Stamp & Signature

A waiver from the requirement that the Landscape Plan be prepared, signed and stamped by a NH Licensed Landscape Architect.

and further provided the Planning Board shall not approve waivers unless it shall make findings based upon the evidence presented to it in each specific case that:

(1) The granting of the waiver will not be detrimental to the public safety, health, or welfare or injurious to other property; The proposed plantings only involved street trees which have been selected from the City's List of Street Trees.

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(2) *The conditions upon which the request for a waiver is based are unique to the property for which the waiver is sought and are not applicable generally to other property;*

No shrubs or other landscape plantings are being proposed except for street trees.

(3) *Because of the particular physical surroundings, shape, or topographical conditions of the specific property involved, a particular and unnecessary hardship to the owner would result, as distinguished from a mere inconvenience, if the strict letter of these regulations are carried out;*

The regulation does not materially affect the subdivision whatsoever.

(4) *Specific circumstances relative to the subdivision or conditions of the land in such subdivision indicate that the waiver will property carry out, or not be contrary to, the spirit and intent of the regulations; and*

Street trees are being proposed from a list published by the City.

(5) *The waiver will not in any manner vary the provisions of the Zoning Ordinance, Master Plan Reports, or Official Map.*

The Landscape Plan provided meets all other requirements.

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Waiver from Section 16.03(15) - Municipal Water Supply on Final Plat

A waiver from the requirement that the location and size of all existing and proposed water mains, including hydrants, gates, valves, and blowoffs to be shown on the final recordable plan;

and further provided the Planning Board shall not approve waivers unless it shall make findings based upon the evidence presented to it in each specific case that:

(1) The granting of the waiver will not be detrimental to the public safety, health, or welfare or injurious to other property;

Unnecessary to show municipal water supply on the final plat . This information is depicted on the Subdivision Improvement Plan sheets.

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(2) *The conditions upon which the request for a waiver is based are unique to the property for which the waiver is sought and are not applicable generally to other property;*

Unnecessary to show municipal water supply on the final plat .

This information is depicted on the Subdivision Improvement Plan sheets.

(3) *Because of the particular physical surroundings, shape, or topographical conditions of the specific property involved, a particular and unnecessary hardship to the owner would result, as distinguished from a mere inconvenience, if the strict letter of these regulations are carried out;* Unnecessary to show municipal water supply on the final plat .

This information is depicted on the Subdivision Improvement Plan sheets.

(4) *Specific circumstances relative to the subdivision or conditions of the land in such subdivision indicate that the waiver will property carry out, or not be contrary to, the spirit and intent of the regulations; and*

Unnecessary to show municipal water supply on the final plat .

This information is depicted on the Subdivision Improvement Plan sheets.

(5) *The waiver will not in any manner vary the provisions of the Zoning Ordinance, Master Plan Reports, or Official Map.*

Unnecessary to show municipal water supply on the final plat .

This information is depicted on the Subdivision Improvement Plan sheets.

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Waiver Request Form – Subdivision Regulations

Instructions:

1. List the section for which the waiver is being requested, along with a brief explanation of the request.
2. Explain how the waiver request complies with each criterion.

Section 35.08 *Waivers: Where the Planning Board finds that extraordinary hardships or practical difficulties may result from strict compliance with these regulations and/or the purposes of these regulations may be served to a greater extent by an alternative proposal, it may approve waivers to these subdivision regulations so that substantial justice may be done and the public interest secured, provided that such waiver shall not have the effect of nullifying the intent and purpose of these regulations.*

Waiver from Section 28.04(6)(c) - Ornamental Street Trees

A waiver from the requirement that no more than 25% of street trees be classified.

as ornamental trees, to allow for up to 39% of proposed trees to be ornamental.

and further provided the Planning Board shall not approve waivers unless it shall make findings based upon the evidence presented to it in each specific case that:

(1) The granting of the waiver will not be detrimental to the public safety, health, or welfare or injurious to other property; Existing overhead utilities in Elm Street do not allow for Shade trees.

(2) *The conditions upon which the request for a waiver is based are unique to the property for which the waiver is sought and are not applicable generally to other property;*

Existing overhead utilities conflict with shade trees

(3) *Because of the particular physical surroundings, shape, or topographical conditions of the specific property involved, a particular and unnecessary hardship to the owner would result, as distinguished from a mere inconvenience, if the strict letter of these regulations are carried out;*

Existing overhead utilities conflict with shade trees

(4) *Specific circumstances relative to the subdivision or conditions of the land in such subdivision indicate that the waiver will property carry out, or not be contrary to, the spirit and intent of the regulations; and*

Existing overhead utilities conflict with shade trees

(5) *The waiver will not in any manner vary the provisions of the Zoning Ordinance, Master Plan Reports, or Official Map.*

Waiver request is consistent with all Regulations.

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Waiver Request Form – Subdivision Regulations

Instructions:

1. List the section for which the waiver is being requested, along with a brief explanation of the request.
2. Explain how the waiver request complies with each criterion.

Section 35.08 *Waivers: Where the Planning Board finds that extraordinary hardships or practical difficulties may result from strict compliance with these regulations and/or the purposes of these regulations may be served to a greater extent by an alternative proposal, it may approve waivers to these subdivision regulations so that substantial justice may be done and the public interest secured, provided that such waiver shall not have the effect of nullifying the intent and purpose of these regulations.*

Waiver from Section 16.03(18) - Other Utilities on Final Plat

A waiver from the requirement that the location and size of all existing

and proposed underground and overhead non-municipal utilities to

be shown on the final recordable plan.

and further provided the Planning Board shall not approve waivers unless it shall make findings based upon the evidence presented to it in each specific case that:

(1) The granting of the waiver will not be detrimental to the public safety, health, or welfare or injurious to other property;

Unnecessary to show utilities on the final plat .

This information is depicted on the Subdivision Improvement Plan sheets.

(2) *The conditions upon which the request for a waiver is based are unique to the property for which the waiver is sought and are not applicable generally to other property;* Unnecessary to show utilities on the final plat . This information is depicted on the Subdivision Improvement Plan sheets.

(3) *Because of the particular physical surroundings, shape, or topographical conditions of the specific property involved, a particular and unnecessary hardship to the owner would result, as distinguished from a mere inconvenience, if the strict letter of these regulations are carried out;* Unnecessary to show utilities on the final plat . This information is depicted on the Subdivision Improvement Plan sheets.

(4) *Specific circumstances relative to the subdivision or conditions of the land in such subdivision indicate that the waiver will property carry out, or not be contrary to, the spirit and intent of the regulations; and* Unnecessary to show utilities on the final plat . This information is depicted on the Subdivision Improvement Plan sheets.

(5) *The waiver will not in any manner vary the provisions of the Zoning Ordinance, Master Plan Reports, or Official Map.* Unnecessary to show utilities on the final plat .

This information is depicted on the Subdivision Improvement Plan sheets.

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Waiver Request Form – Subdivision Regulations

Instructions:

1. List the section for which the waiver is being requested, along with a brief explanation of the request.
2. Explain how the waiver request complies with each criterion.

Section 35.08 *Waivers: Where the Planning Board finds that extraordinary hardships or practical difficulties may result from strict compliance with these regulations and/or the purposes of these regulations may be served to a greater extent by an alternative proposal, it may approve waivers to these subdivision regulations so that substantial justice may be done and the public interest secured, provided that such waiver shall not have the effect of nullifying the intent and purpose of these regulations.*

Waiver from Section 16.02(2) and 16.04 - Paper Sets of Plan

A waiver from the requirement that paper sets of plans be submitted as part of the application. It is our understanding that all documents are to be submitted as PDF's through the City's online portal.

and further provided the Planning Board shall not approve waivers unless it shall make findings based upon the evidence presented to it in each specific case that:

(1) The granting of the waiver will not be detrimental to the public safety, health, or welfare or injurious to other property; In order to comply with current City policy that is contradictory to the Subdivision Regulations.

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(2) *The conditions upon which the request for a waiver is based are unique to the property for which the waiver is sought and are not applicable generally to other property;*

In order to comply with current City policy.

(3) *Because of the particular physical surroundings, shape, or topographical conditions of the specific property involved, a particular and unnecessary hardship to the owner would result, as distinguished from a mere inconvenience, if the strict letter of these regulations are carried out;*

In order to comply with current City policy.

(4) *Specific circumstances relative to the subdivision or conditions of the land in such subdivision indicate that the waiver will property carry out, or not be contrary to, the spirit and intent of the regulations; and*

In order to comply with current City policy.

(5) *The waiver will not in any manner vary the provisions of the Zoning Ordinance, Master Plan Reports, or Official Map.*

In order to comply with current City policy.

CITY OF CONCORD

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Planning Division

Waiver Request Form – Subdivision Regulations

Instructions:

1. List the section for which the waiver is being requested, along with a brief explanation of the request.
2. Explain how the waiver request complies with each criterion.

Section 35.08 *Waivers: Where the Planning Board finds that extraordinary hardships or practical difficulties may result from strict compliance with these regulations and/or the purposes of these regulations may be served to a greater extent by an alternative proposal, it may approve waivers to these subdivision regulations so that substantial justice may be done and the public interest secured, provided that such waiver shall not have the effect of nullifying the intent and purpose of these regulations.*

Waiver from Section 16.04(3), 16.04(4) and 16.04(5) - Scale of Construction Plans

A waiver from the requirement that construction plans be prepared at the same scale as the final plat.

and further provided the Planning Board shall not approve waivers unless it shall make findings based upon the evidence presented to it in each specific case that:

(1) The granting of the waiver will not be detrimental to the public safety, health, or welfare or injurious to other property; The final plat is prepared at a scale of 1"=60' because it is required to show the entire parcel boundary. However, the construction plans only cover a small corner of the parcel and are prepared at larger scale in order to provide greater detail.

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(2) *The conditions upon which the request for a waiver is based are unique to the property for which the waiver is sought and are not applicable generally to other property;*

The overall property is too large to show at a scale that is suitable for the detail needed on construction plans.

(3) *Because of the particular physical surroundings, shape, or topographical conditions of the specific property involved, a particular and unnecessary hardship to the owner would result, as distinguished from a mere inconvenience, if the strict letter of these regulations are carried out;*

The parcel is too large to show at a scale that is suitable for the detail needed on construction plans.

(4) *Specific circumstances relative to the subdivision or conditions of the land in such subdivision indicate that the waiver will property carry out, or not be contrary to, the spirit and intent of the regulations; and*

Very short road proposed over a small portion of the parcel.

(5) *The waiver will not in any manner vary the provisions of the Zoning Ordinance, Master Plan Reports, or Official Map.*

Waiver request is consistent with all Regulations.

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Waiver Request Form – Subdivision Regulations

Instructions:

1. List the section for which the waiver is being requested, along with a brief explanation of the request.
2. Explain how the waiver request complies with each criterion.

Section 35.08 *Waivers: Where the Planning Board finds that extraordinary hardships or practical difficulties may result from strict compliance with these regulations and/or the purposes of these regulations may be served to a greater extent by an alternative proposal, it may approve waivers to these subdivision regulations so that substantial justice may be done and the public interest secured, provided that such waiver shall not have the effect of nullifying the intent and purpose of these regulations.*

Waiver from Section 21.16 - Street Lights

A waiver from the requirement that street lights be installed at all intersections.

Note that this Section is in direct conflict with Section 21.09(5) which only requires

street lights at intersections serving more than 8 residential dwellings.

and further provided the Planning Board shall not approve waivers unless it shall make findings based upon the evidence presented to it in each specific case that:

(1) The granting of the waiver will not be detrimental to the public safety, health, or welfare or injurious to other property; The proposed subdivision serves only 5 lots Per Section 21.09(5) a street light is not needed at the intersection.

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(2) *The conditions upon which the request for a waiver is based are unique to the property for which the waiver is sought and are not applicable generally to other property;*

There is a conflict in the Regulations - street light does not appear to be required at this intersection.

(3) *Because of the particular physical surroundings, shape, or topographical conditions of the specific property involved, a particular and unnecessary hardship to the owner would result, as distinguished from a mere inconvenience, if the strict letter of these regulations are carried out;*

Regulations do not require street lights at intersections serving only 5 lots.

(4) *Specific circumstances relative to the subdivision or conditions of the land in such subdivision indicate that the waiver will property carry out, or not be contrary to, the spirit and intent of the regulations; and*

Subdivision road only serves 5 lots.

(5) *The waiver will not in any manner vary the provisions of the Zoning Ordinance, Master Plan Reports, or Official Map.*

Waiver request is consistent with all Regulations.

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Planning Division

Waiver Request Form – Subdivision Regulations

Instructions:

1. List the section for which the waiver is being requested, along with a brief explanation of the request.
2. Explain how the waiver request complies with each criterion.

Section 35.08 *Waivers: Where the Planning Board finds that extraordinary hardships or practical difficulties may result from strict compliance with these regulations and/or the purposes of these regulations may be served to a greater extent by an alternative proposal, it may approve waivers to these subdivision regulations so that substantial justice may be done and the public interest secured, provided that such waiver shall not have the effect of nullifying the intent and purpose of these regulations.*

Waiver from Section 16.03(4) - Topography on Final Plat

A waiver from the requirement that existing topographic conditions and all proposed changes in ground elevations to be shown on the final recordable plan.

and further provided the Planning Board shall not approve waivers unless it shall make findings based upon the evidence presented to it in each specific case that:

(1) The granting of the waiver will not be detrimental to the public safety, health, or welfare or injurious to other property; Unnecessary to show topography on the final plat. Topography is instead shown on the Topographic Subdivision Plat as is customary.

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(2) *The conditions upon which the request for a waiver is based are unique to the property for which the waiver is sought and are not applicable generally to other property;* Unnecessary to show topography on the final plat. Topography is instead shown on the Topographic Subdivision Plat as is customary.

(3) *Because of the particular physical surroundings, shape, or topographical conditions of the specific property involved, a particular and unnecessary hardship to the owner would result, as distinguished from a mere inconvenience, if the strict letter of these regulations are carried out;* Unnecessary to show topography on the final plat. Topography is instead shown on the Topographic Subdivision Plat as is customary.

(4) *Specific circumstances relative to the subdivision or conditions of the land in such subdivision indicate that the waiver will property carry out, or not be contrary to, the spirit and intent of the regulations; and* Unnecessary to show topography on the final plat. Topography is instead shown on the Topographic Subdivision Plat as is customary.

(5) *The waiver will not in any manner vary the provisions of the Zoning Ordinance, Master Plan Reports, or Official Map.* Unnecessary to show topography on the final plat.

Topography is instead shown on the Topographic Subdivision Plat as is customary.

NORTHPOINT ENGINEERING, LLC
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July 8, 2025

AnneMarie Skinner
City Planner
City of Concord Planning Dept
41 Green Street
Concord, NH 03301

Subject: Subdivision Application
Zendko Subdivision
Map 15P Lot 26-1 (Elm Street)
Concord, New Hampshire
NPE Proj. No. 25019

Dear Ms. Skinner,

I am writing to you on behalf of the Applicant for the referenced Subdivision Application to request that the Planning Board's determination of completeness hearing be continued to the regularly scheduled meeting on August 20th in order for additional items to be worked out with Planning Department staff. As part of this request, we are submitting an additional waiver request asking for the public hearing to also be scheduled for the August 20th meeting. Thank you.

Sincerely,

Jeffrey W. Lewis, PE
Principal Engineer
Northpoint Engineering, LLC

NORTHPOINT ENGINEERING, LLC
Civil Engineering ◢ Land Planning ◢ Construction Services

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July 25, 2025

AnneMarie Skinner
City Planner – Community Planning
City of Concord
41 Green Street
Concord, NH 03301

Subject: **Willow Run Subdivision**
Elm Street
Concord, New Hampshire
NPE Proj. No. 25019

Dear Ms. Skinner,

We have revised the Willow Run Subdivision – (2025-071) to address comments received by the City on July 11, 2025. Enclosed is an update set of the Subdivision Improvement Plans, revised 7/25/25, along with additional waiver requests, as identified below. Responses to specific comments are as follows:

Compliance with Subdivision Regulations:

3.1 All plan sheets – Section 12.02(1)(a) Title Block requires that the title of the plan be included in the title block. The title of the project in the title block is inconsistent throughout the plan set. Specifically, the title shown on sheets S1, S2, and S3 does not match the title shown on the other sheets, that title being "Zendko Subdivision Elm Street, Map 15P Lot 26-1 Concord NH."

Response: Title blocks have been coordinated accordingly.

3.2 Recordable Plat – Section 12.02 Plans requires the information listed in 12.02(1) through (4) to be shown all plans, plats, and drawings for major subdivisions. (3) Standard Notes requires listing the notes set forth in Appendix B on the recordable plat. Appendix B lists 17 items that must be listed on the recordable plat. The recordable plat (sheet S2) does not contain all 17 items set forth in Appendix B. Specifically, the existing and proposed street addresses, list of required local, state, and federal permits, list of Planning Board waivers and conditional use permits, list of those conditions of Planning Board approval which remain to be fulfilled after the recording of the plat, and phasing notes. Carefully review Appendix B and ensure that all 17 items are noted on the recordable plat to satisfy completeness of Section 12.02(3). The list permits required needs to include from the Engineering Services Division: excavation permit, driveway permit, utility connection permits (sewer, water, storm), other permits deemed necessary by the City Engineer; EPA Notice of Intent, general construction permit, and accompanying SWPPP if area of disturbance is over 1 acre; NHDES alteration of terrain if disturbance is over 100,000 square feet.

Response: All required items have been added to the Recordable Plat accordingly. Please note that a second sheet (Easement Plan) will also be recorded.

3.3 Recordable Plat – Section 12.02(4) Conditions of Planning Board Approval and Section 16.03(19) Conditions of Approval require listing conditions of approval which remain to be fulfilled after plat recording. Sheet S2 does contain any notes regarding subsequent conditions of approval. This completeness item can be satisfied by adding a note to sheet S2 that states: "The development is subject to all subsequent conditions of Planning Board approval from Case 2025-071."

Response: City of Concord Approval Notes have been added to Sheet S2. Note 2 addresses this comment.

3.4 Existing Conditions Plan – Section 12.08(13) Flood Hazard requires that a notation as to whether or not the property is located in a Flood Hazard Zoning Overlay District be noted on the existing conditions plan, along with the location of the boundary line of the Flood Hazard Zoning Overlay District if it transects the property. Note 5 on sheet S1 references Zone X from the FEMA flood map but does not state whether or not the property is in the City's FH District. Note that there are three areas comprising the FH District – floodway, 100-year floodplain, and 500-year floodplain. The note needs to be revised to clearly state presence of floodway, 100-year floodplain, and/or 500-year floodplain anywhere on the site. Should any of the three be present on the site, the boundary line of such needs to be identified on the existing conditions plan to satisfy this completeness item.

Response: Note 5 has been revised to specifically state that the parcel does not lie with the FH Overland District.

3.5 Existing Conditions Plan – Section 12.08(23)(c) requires that the existing conditions plan list the impervious surface coverage of the site in square feet and percent. This information is not noted on the existing conditions plan and is required for completeness.

Response: The impervious surface coverage has been listed on the Existing Conditions Plan accordingly with the label for the lot in the plan view.

3.6 Existing Conditions Plan – Section 12.08(23)(d) requires that the existing conditions plan show the useable land area calculations for residential use. This information is missing from sheet S1 and is required for completeness.

Response: Useable Land Area tabulation has been added to the Existing Conditions Plan accordingly.

3.7 Recordable Plat – Section 13.01(6) State and Federal Permits requires that a copy of any application made to a state or federal agency required for the approval of the subdivision, including those required for the development of the individual lots, be submitted with the application. The submittal did not include copies of any state and federal permits. Note 8 on sheet S2 states a NHDES Sewer Extension permit is required as part of this application and is pending. If the application has not been submitted, then it's not pending and the note needs to be revised. If the application is pending, then a copy needs to be submitted for completeness.

Response: The NHDES Sewer Permit application has not yet been submitted. The note on the Plat has been revised accordingly.

3.8 All Sheets - Section 16.02(7) Lot Numbers requires that all lots shall be sequentially numbered. The lots are numbered inconsistently throughout the plan set, with some sheets showing tax map lot sequencing and the cover sheet showing 1, 2, 3, 4, 5. The Assessing Department does not want tax map lot sequencing shown at this point. To satisfy this completeness requirement then, inside each lot just put a number 1, 2, 3, 4, 5, and 6 on each plan sheet. Underneath the lot number, put the street address number so it will look something like this:
1
Street Name Pending

2
Street Name Pending

and, so on and so forth. Be sure to number all six lots.

Response: Lot numbers have been revised to coordinate with the suggested format.

3.9 Recordable Plat - Section 16.02(8) Street Names and Addresses and Section 20.31 Street Name and Addresses require the names of all proposed new streets shall be approved by the Board and noted on the plat, along with the address of existing and proposed lots. Sheet S2 does not provide a name for the Board's approval for the new public street, nor does it list the addresses for the six lots. Street numbers have been assigned for five of the six lots and shall be added. The street names have been submitted for approval, so for now list is as "street name pending" on the street and in the address portion.

Response: Street Name and addresses have been added to the Plan accordingly.

3.10 Recordable Plat - Section 16.02(9) Proposed Used requires that each plat shall include a statement of the proposed type of residential use of any lot. The statement is missing from sheet S2 and shall be added as a separate note, or incorporated as part of Note 4, and shall include the proposed type of residential use (single-family dwelling) for all six lots.

Response: Note 4 has been revised accordingly to indicate that all lots are single-family residential.

3.11 Recordable Plat - Section 16.03(1) Abutting Properties requires showing existing abutting properties including property lines, buildings, wells, septic systems, owners' names and addresses, property addresses, and tax map lot numbers on the recordable plat. The property addresses are missing from Concord Tax Map Lot 15P Lot 14 and Boscawen Tax Map Lots 83 63B and 83 63-3. The building at 134 Elm St is missing. Without these items, the application is not complete.

Response: Missing items have been added to the Plat accordingly.

3.12 Recordable Plat - Section 16.03(9) Streets and Right-of-Way requires the location and the right-of-way and traveled way widths of all existing and proposed streets, alleys, and other public ways to be shown on the plat. With the exception of the proposed right-of-way width dimension for the new public street, all this information is shown on the recordable plat. Confirm that all the information is shown and labeled on the recordable plat and show and label the right-of-way width dimension for the new public street on the recordable plat.

Response: The width of the new public street right-of-way has been added to the Plat accordingly.

3.13 Recordable Plat - Section 16.03(10) Access and Driveways requires all existing and proposed driveways along the subdivision frontage, on abutting properties, and on the opposite sides of the street be shown on the subdivision plat. The recordable plat is not showing any proposed driveways for any of the six lots, nor is it showing the existing driveway at 141 Elm St. If the applicant does not want to show proposed driveway locations for all six lots on the recordable plat (since they are shown on other plan sheets), submit a waiver request from Section 16.03(10) to not show proposed driveways on the recordable plat. At the same time, be sure to add the existing driveway to the recordable plat for 141 Elm St.

Response: A waiver request has been included regarding the proposed driveways. And all existing driveways are now shown on the Plat.

3.14 Recordable Plat - Section 16.03(11) Easements requires the location, width, and purpose of existing and proposed easements for road rights-of-ways, utilities, drainage, slope, open space or conservation easements, and any other easement as required. The easements to be shown include both public and private easements. The dimensions and bearings shall be shown on sheet S2 for the boundaries of all easement areas. Specifically, the dimensions and bearings shall be shown on sheet S2 for all proposed easements. All identification and labeling of the easements shall include the word "public" so that it's clear they are intended to be public easements. While this completeness item pertains to the recordable plat, make sure that the identification of the easements is consistent throughout the plan set so that wherever the easements are shown and labeled, that the title of the easement is the same throughout.

Response: A separate Easement Plan (Sheet S3) has been included within the plan set that includes all required dimensions for the easements.

3.15 Recordable Plat - Section 16.03(13) Municipal Sewer requires the location, size, and invert elevations of existing and proposed sanitary and storm sewers including manholes, catch basins, and culverts to be shown on the final plat. The proposed sanitary manholes and stormwater catch basins are missing from the recordable plat and are required for completeness. If the applicant does not want to show this information on the recordable plat (since it is provided on other sheets), submit a waiver request from Section 16.03(13) to not show this information on the recordable plat.

Response: A waiver request has been included regarding the municipal sewer.

Recordable Plat - Section 16.03(15) Municipal Water Supply requires the location and size of all existing and proposed water mains, including hydrants, gates, valves and blowoffs to be shown on the final plat. The proposed water main and appurtenances are missing from the recordable plat and are required from completeness. If the applicant does not want to show this information on the recordable plat (since it is provided on other sheets), submit a waiver request from Section 16.03(15) to not show this information on the recordable plat.

Response: A waiver request has been included regarding the municipal water.

3.16 Recordable Plat - Section 16.03(18) Other Utilities requires the location and size of all existing and proposed underground and overhead non-municipal utilities to be shown on the final plat. If the applicant does not want to show this information on the recordable plat (since it is provided on other sheets), submit a waiver request from Section 16.03(18) to not show this information on the recordable plat.

Response: A waiver request has been included regarding the other utilities.

3.17 Sheet 4 - Section 16.04(2)(a) Roadway Plan requires plans shall indicate right-of-way widths and traveled way widths, the location and widths of sidewalks, tipdowns, curbs, street trees, street lights, and street signs, pavement markings, all radii of curves, lengths of tangents and central angles, and centerline stationing. Specifically, granite curb tip downs shall be shown on sheet 4. Review sheet 4 at the same time to make sure that all information required by Section 16.04(2)(a) is shown.

Response: The location of the granite curb tip-downs has been identified on the plan.

3.18 Sheet 5 Grading, Drainage & Utilities Plan - Section 16.04(6) Non-Municipal Utilities requires the location of all manholes, transformers, poles, and other appurtenant facilities or structures shall be shown on the plan. Specifically, the plan shows underground non-municipal utilities running to a transformer in the center of the cul-de-sac, but not how each individual lot, or future development will be serviced. Add to this sheet how all six lots will be serviced with nonmunicipal utilities.

Response: Each lot has been provided with UGU services.

3.19 Section 16.04(8) Construction Detail Sheets requires that construction detail sheets shall be provided for all public and private improvements, as set forth in the Construction Standards and Details. The following additional details that meet or exceed the requirements of the Construction Standards and Details shall be provided in the plan set:

a. Detail M-6 Right-of-Way Bound Detail shall be added for the proposed granite monuments along the public street;
   Added to Sheet 13.
b. Detail M-3 Pavement Markings shall be added for the proposed stop sign bar;
   Added to Sheet 13.
c. Detail SD-4 shall be added for the construction of the proposed public drain manhole inverts;
   Added to Sheet 13.
d. Replace or revise the Primary Conduit Trench Detail on sheet 14 to be compliant with Detail U-1 and Section 10.02 of the Concord Construction Standards and Details;
   Added to Sheet 17.
e. Replace or revise Detail D-7 on sheet 11 with Detail D-4 Drive with Vertical Granite Curb, w/o Sidewalks, since vertical granite curbing is proposed.
   Added to Sheet 12.

Response: The requested details have been added to the construction detail sheets accordingly.

The items below are missing from the application, but they are not required for the determination of completeness.

3.20 Section 13.02(1) Right-of-Way Easement requires the submittal of deeds of easement for any new, extended, or expanded right-of-way of any public street shown on the plan or required to be dedicated by the Planning Board for review. No right-of-way easements were provided with the application submittal, though the plan appears to show the need for public right-of-way and future public right-of-way easements. The necessary right-of-way easements shall be provided for review and approval, prior to endorsement of the final plat, by the Planning Board Clerk, City Engineer, and the City Solicitor as to form and content. Property executed easement documents and agreements shall be submitted for recording with the plat.

Response: This will be prepared and submitted subsequent to Planning Board conditional approval.

3.21 Section 13.02(2) Utility, Drainage, and Slope Easements requires the submittal of utility and drainage easement documents for review. No utility or drainage easements were included with this application submittal, though the plan appears to show the need for drainage easements. The necessary drainage easements shall be provided for review and approval, prior to endorsement of the final plat, by the Planning Board Clerk, City Engineer, and the City Solicitor as to form and content. Properly executed easement documents and agreements shall be submitted for recording with the plat.

Response: This will be prepared and submitted subsequent to Planning Board conditional approval.

3.22 Section 13.02(5) Municipal Utility Extension states approval from City Council for the extension of municipal utilities shall be obtained where required. Section 9-5-1 Minor Water and Sewer Extensions of the General Code states that the Director of Water Resources is authorized to extend the City water or sewer system within the boundaries of the City of Concord to permit the hook-up of not more than two users. With more than two users proposed, the extension of the municipal sewer system will require approval from the City Council.

Response: it is our expectation that City staff will coordinate this approval process through City Council subsequent to Planning Board conditional approval.

3.23 Section 13.02(10) State and Federal Permits requires copies of all required state and federal permits prior to endorsement of the plat by the Chair and the Clerk of the Planning Board. Note 8, on sheet 2 Recordable Revised Subdivision Plan states a NHDES Sewer Extension permit is required as part of this application and pending. A copy of this NHDES permit approval shall be required prior to endorsement of the plat by the Chair and the Clerk of the Planning Board.

Response: Acknowledged. The NHDES Sewer Connection will be submitted to NHDES upon the City's approval of the proposed Sewer Main extension.

3.24 For better compliance with Section 19.05(5), adjust the line between (what you now have labeled as) Lot 26-3 and Lot 26-4 to eliminate that odd strip at the south side of Lot 26-4. Maybe shift it up to the north to be in line with what is now the northeast boundary line for Lot 26-4? That would make Lot 26-4 kind of a rectangle with a single south lot line.

Response: This property line has been rotated to the maximum extent practicable while still providing for the required lot frontage.

3.25 Section 20.09 Residential Single-Family Driveways provides requirements for all driveways on each lot intended for a house. Sheet 4 shall be revised to show that all six driveways meet all seven requirements of Section 20.09, including showing additional grading if necessary, and the profile grade requirements of Detail D-4 from the Construction Standards and Details.

Response: On sheet 12, spot grades have been added to the grading detail to depict that the proposed driveways match the requirements set forth by Detail D-4.

3.26 Section 20.21 Procedure for Subdivision Where Further Subdivision Is Possible states whenever a parcel of land is subdivided and where there is the possibility that further subdivision may occur on the property or on the immediately adjacent properties, the Planning Board may require that rights-of-way for the future layout or extension of streets be shown on the plat and easements be recorded for the future streets. A right-of-way easement for is shown for possible future development, but the layout and location of the easement does not work with the proposed new public cul-de-sac and does not lend itself at all for future construction and dedication as a public street.

Response: The future right-of-way easement has been revised to be a municipal utilities easement only. Driveway access for the remaining parcel will be from Elm Street.

Section 20.23 Temporary Dead-End Streets states: "If the adjacent property is undeveloped and the street(s) must temporarily be a dead end, the right-of-way shall be extended to the property line and the street(s) shall be constructed to the property line or the maximum allowable length of a dead-end road or common private driveway or combination of both. A temporary T-shaped turnabout shall be provided on all temporary dead-end streets, and the easements shall be designed to revert to the abutting lots once the roadway is extended."

As presented, the plan is a hybrid of a permanent cul-de-sac street and an attached right-of-way easement, so it does not satisfy either Section 20.21 or Section 20.23. Note that Section 20.21 is not a requirement, but could be imposed by the Planning Board, whereas Section 20.23 is required.

Response: The intent is for a permanent cul-de-sac and not a temporary dead-end. Per the above comment the future right-of-way easement has been eliminated.

3.27 Section 21.04 Construction Standards and Details requires streets shall be constructed in conformity with the design standards contained in the Subdivision Regulations and the Construction Standards and Details. There are items currently shown that do not comply with the Construction Standards and Details that need to be reviewed for compliance, as follows:

a. Each of the six driveways shall have a vertical granite curb radius as shown Detail D-4 Drive With Vertical Granite Curb, w/o Sidewalk.

Response: The proposed driveways have been revised to match Detail D-4.

b. Construction Note 10, on sheet 5 shall be revised from "Install double yellow thermoplastic centerline after pavement overlay to match into existing paint striping in roadway" to "Install double yellow centerline after pavement overlay, in accordance with the City of Concord Construction Standards, to match into existing paint striping in roadway."

Response: Note 10 has been revised accordingly.

c. The reference to "Shaker Rd" in Construction Note 11 shall be revised accordingly.

Response: Note revised accordingly.

d. Section 35.04 Conflict with other Public Provisions states "…whichever provisions are more restrictive or impose higher standards shall control." The proposed cul-de-sac has been designed in accordance with Section 21.11 Cul-de-sacs of the Subdivision Regulations; however, Detail R-9 Roadway Termination Cul-De-Sac contains greater dimensional requirements than the Subdivision Regulations, is considered to be a higher standard, and shall control. As such, the cul-de-sac shall be revised to be designed to be consistent with the requirements of Detail R-9 Roadway Termination Cul-De-Sac.

Response: Waiver request has been submitted to allow the Cul-de-Sac as designed.

3.29 Section 23.02 Stormwater Management Construction Standards requires all public and private storm water drainage facilities shall be constructed to the standards contained in the Subdivision Regulations and the Construction Standards and Details. To comply with the regulations, the proposed HDPE public stormwater pipe material shall be replaced with RCP, PVC, or DI pipe material consistent with Section 6.02.B Pipe of the Construction Standards and Details, and Construction Note 15 on sheet 5 shall be revised accordingly.

Response: A waiver has been requested for this requirement.

3.30 Section 23.12 Drainage Easements requires that drainage easements shall be provided with satisfactory access for maintenance and construction vehicles. Provide a note of explanation regarding the intended access to each of the easements for City maintenance and construction vehicles.

Response: The drainage easement has been revised to indicate it is a public drainage easement.

3.31 Section 24.03 Design Standards for Municipal Water Supply requires that, except for subdivisions located within the jurisdiction of the Penacook and Boscawen Water Precinct, which are addressed in Section 24.07, the standards in Sections 24.03(1) through (11) shall govern. The subject site, however, is within the jurisdiction of, and proposed to be serviced by, the Penacook and Boscawen Water Precinct. Accordingly, Section 24.07 shall govern the design and construction of the proposed municipal water system.

Section 24.07 Requirements and Design Standards for Municipal Water Supply in Portions of Penacook requires submittal of plans prepared, signed, and sealed by a New Hampshire licensed professional engineer, of facilities for the supply and distribution of water, including fire protection capabilities, in a manner and to the standards prescribed by the Penacook and Boscawen Water Precinct and the New Hampshire Department of Environmental Services (NHDES). Specifically, the applicant shall submit to the Planning Division written confirmation from the Penacook and Boscawen Water Precinct and the NHDES stating the proposed plan is feasible and their standards have been met.

Response: Coordination with the Penacook and Boscawen Water Precinct is already underway.

3.32 Section 26 Nonmunicipal Utilities states the applicant is responsible for all coordination with the utility companies to assure that nonmunicipal utilities are installed in accordance with plans approved by the Board pursuant to these regulations, that all utilities shall be located underground through the subdivision, that existing above-ground utility facilities on the property proposed for subdivision shall be removed and placed underground, and utilities shall be located within street rights-of-way in accordance with the typical street cross-sections, as contained in Section 20 Street Layout and Access Standards and Section 21 Design Standards for Streets and Private Drives. A nonmunicipal utilities plan shall be provided that complies with Section 26. Any deviations from what is shown on the nonmunicipal utilities plan that is approved by the Planning Board shall require return to the Planning Board as an amendment in accordance with the regulations. Accordingly, it is strongly recommended that coordination with and approval from the nonmunicipal utilities is received on the current plan prior to the public hearing.

Response: Coordination with Unitil is underway.

3.33 Section 28.04(6)(e) requires trees shall be located to avoid the interference of root systems with underground utilities. The following trees appear to be located within 10 feet of a proposed underground utility and either the utility, or the tree shall be relocated accordingly:

a. Red Maple Varieties (Ar) – approximately located at STA 0+44 RT 24, located above the proposed nonmunicipal utility line;
b. Dawn Redwood (Mg) – approximately located at STA 0+81 RT 21, located above the proposed non-municipal utility line;
c. Thornless Honey Locust (Gt) – approximately located at STA 1+26 RT 21, located above the proposed nonmunicipal utility line and proposed water and sewer service for lot 3;
d. Sweetgum (Ls) – approximately located at STA 2+20 RT 21, located above the proposed water and sewer service proposed for lot 4;
e. Dawn Redwood (Mg) – approximately located at STA 2+20 RT 53, located above the water and sewer service proposed for lot 4; and
f. Thornless Honey Locust (Gt) – approximately located at STA 0+57 LT 21, located above the stormwater pipe between DMH 1 and HW 1.

Response: Underground utilities have been added to the Landscape plan to prove proper separation and confirm no conflicts will occur. Proposed tree locations have been adjusted accordingly.

3.34 Section 28.05 Erosion Control requires disturbed areas shall be restored pursuant to the Concord Construction Standards and Details, the New Hampshire Department of Environmental Protection Services regulations, and the US Environmental Protection Agency's National Pollution Discharge Elimination System (NPDES) requirements. A note shall be added to sheet 7 stating that all erosion control measures shall be constructed in accordance with the Subdivision Regulations, the Concord Construction Standards and Details, and the approved plan set.

Response: The above note has been added to the Erosion Control Sheet as Note 6.

3.35 The Engineering Services Division reviewed the application and had the following compliance comments:

a. Sheet S1 Existing Conditions plan - Spot elevations shall be placed between contour lines, pursuant to Section 12.08(3) Topography on sheet S1.

   Response: Spot elevations have been added to the Existing Conditions Plan accordingly.

b. Sheet S1 Existing Conditions Plan - Utility pole numbers shall be added to sheet S1.

   Response: Utility pole numbers have been added to the Existing Conditions Plan accordingly.

c. Sheets S2 and S3 - Ensure proper boundary markers are shown on sheets S2 and S3, matching the symbol legend per Section 19.04(1) Street Right-of-way Monuments and Section 19.04(2) Lot Monuments.

   Response: Boundary markers are shown on the Final Plat sheets.

d. Sheet S2 - On sheet S2, the proposed lots are labeled as 26-3, 26-4, 26-5, 26-8, and 26-7. Paul Gendron assigned street address numbers to 5 of the lots, using the lot numbering sequencing currently show. Bear that in mind when you add the street address numbers knowing that, per 3.8, above the lot numbering is changing.

   26-3 will have the address of 2 "street name"; 26-4 will have the address of 4 "street name"; 26-5 will have the address of 6 "street name"; 26-6 will have the address of 3 "street name"; and 26-7 will have the address of 1 "street name". I am checking with Paul for a street address number for the large lot. For now add it as # Elm St assuming one house and a driveway off Elm.

   Response: All lot numbers and street addresses have been updated accordingly.

e. Sheet 4 On the Roadway Layout Plan, the right-of-way diameter at the cul-de-sac shall be dimensioned and shown, pursuant to Section 16.04(2)(a).

   Response: The dimension has been added to the cul-de-sac.

f. The size of the proposed cul-de-sac is smaller than the Construction Standard Detail drawing R-9. Revise to comply with R-9 or request a waiver.

Response: A waiver has been requested.

g. On the Roadway Layout Plan, a street name sign at Elm St shall be added, and a detail provided, pursuant to Section 21.09(6) Street Signs and Section 3 of the City of Concord Construction Standards.

Response: A street name sign been noted on the Layout Plan and the detail has been provided on Sheet 13.

h. A permanent public highway easement deed for the new roadway will need to be prepared and submitted for review. An example document may be supplied upon request.

Response: This will be prepared and submitted subsequent to Planning Board conditional approval.

i. A permanent public drainage easement deed for the easements across Lots 26-5, 26-6, and 26-7 will need to be prepared and submitted for review. An example can be supplied upon request.

Response: This will be prepared and submitted subsequent to Planning Board conditional approval.

j. A permanent Public ROW easement deed for the future ROW will need to be prepared and submitted for review. An example can be supplied upon request.

Response: This will be prepared and submitted subsequent to Planning Board conditional approval.

k. Bearings and distances along the proposed drainage and ROW easement across Lots 26-5 and 26-6 shall be included. Additionally, the easement across Lot 26-7 is missing data.

Response: A separate Easement Plan has been prepared and includes all bearings & distances for the proposed easements.

l. Current configuration of future right-of-way easement is difficult to extend public street onto the abutting lot for future development.

Response: Per the above comments the future right-of-way easement has been eliminated.

m. Grading, Drainage and Utilities Plan – provide two gate valves where the proposed water line connects to the existing water line in Elm St. Inside the site, provide shut-off valves where the water services cross the right-of-way line, per Section 24.03(6).

Response: Valves have been added accordingly and Note 4F has been updated to reflect shut-off valves on all water services.

n. On the Grading, Drainage, and Utilities Plan, reconfigure SWMB #2 on Lot 26-5 so that the majority of the drainage infrastructure is closer to the public right-of-way. In the event that the infiltration basin cannot be reconfigured, an access road will need to be designed and shown on the plan set.

Response: SWMB #2 is located at the low end of the site and cannot be reconfigured. A 12-foot wide gravel access drive has been added to the plan to provide access to the SWMB.

o. On the Grading, Drainage, and Utilities Plan, the emergency spillway at SWMB #2 Infiltration Basin on Lot 26-5 is draining water onto the abutting parcel known as 132 Elm Street. Drainage rights shall be secured from 132 Elm Street. An easement deed from 132 Elm Street shall be secured or he basin shall be redesigned, or the drainage easements shall be extended to a natural watercourse or other drainage facility in accordance with Section 23.12 Drainage Easements.

Response: We disagree with this comment. There is a natural drainage course on the abutting parcel and the emergency spillway is directed towards it. The SWMB has been designed so that it does not increase peak flows or volumes onto the adjacent property. It is designed to infiltrate 100% of the collected runoff from the 100-year storm event. The design is in compliance with applicable regulations – a drainage easement across the downstream parcel is not warranted.

p. Install a fence around SWMB#2 Infiltration Basin.

Response: What Section of the Site Plan regulations requires a fence around the SWMB?

q. On the Grading, Drainage, and Utilities Plan, the proposed hydrant shall be relocated at the end of the cul-de-sac northeasterly so that it will not conflict with future roadway extensions.

Response: The proposed hydrant has been relocated to the other side of the maintenance access road driveway.

r. On the Grading, Drainage, and Utilities Plan, provide a 10-foot dimension between water and sewer services on site pursuant to Section 4.03(B)(3) of the City of Concord Construction Standards.

Response: A dimension has been added to the plans to prove we are satisfying the regulation.

s. On the Grading, Drainage, and Utilities Plan, due to the location of both the water and sanitary sewer extension locations on Elm Street, the structural integrity of the narrow stretches of pavement will not be adequate for a milling restoration effort. Instead, a 12-inch reclaim with a 4-inch asphalt treatment will be required. All relevant sheets, details, and notes shall be revised throughout the plan set.

Response: Note 10 on the Grading, Drainage and Utilities Plan has been revised accordingly. The Willow Run Plan & Profile Sheet has also been revised accordingly.

t. Prior to the public hearing, confirm with Unitil that the existing utility pole near the proposed public street is sufficient to supply underground service to the lots in the subdivision.

Response: Correspondence has been initiated with Unitil.

u. On the Erosion Control Plan, the construction entrance shall be widened to the full width of the drive, pursuant to Construction Entrance Detail E-1, Note 7, on sheet 16 of the plan set.

Response: The construction entrance has been revised accordingly.

v. On the Erosion Control Plan, the hatches for "No Disturbance Areas," "Stone Check Dams," and "Erosion Control Mat" shall be added on the plan view, or removed from the legend if not applicable. A stone check dam detail shall be added if it is proposed on the plan.

Response: The Erosion Control legend has been revised accordingly.

w. On the Erosion Control Plan, pre-treatment devices shall be designed for the infiltration facilities in accordance with Section 23.08 of the Subdivision Regulations.

Response: The Catch Basins in the road are proposed as deep-sump, offline catch basins which meet the requirement for pre-treatment devices.

x. On the New Roadway Plan and Profile sheet, the roadway profile shows the connection of Proposed Road to Elm Street as -2% grade from the center line of Elm Street to STA 0+41.31. The profile shall be revised to include a short vertical curve.

Response: The proposed grade has been revised to include a vertical curve.

y. On the New Roadway Plan and Profile sheet, the stormwater pipe at STA 0+25 and the storm drain between CB #4 and DMH #2 appear not to have the required 4-foot minimum cover. If a minimum cover of 4feet cannot be achieved, the plan shall show 2-inches of rigid Styrofoam thermal insulation with a minimum R value of 10 pursuant to Section 6(3)(F)(2) of the City of Concord Construction Standards. All proposed storm sewer on site shall be checked to have either 4-feet of cover, and if that cannot be achieved, shall show the required insulation.

Response: Insulation has been noted on the drainage profiles where needed. And Note #19 has been added to the Grading & Drainage Plan.

z. On the New Roadway Plan and Profile sheet, HDPE pipe is not a permitted stormwater pipe material in the public right-of-way per Section 6.3 and 6.4 of the Construction Standards. A compliant material shall be utilized for the public street.

Response: A waiver has been requested for this requirement.

aa. Section 6.03.G. of the Construction Standards and Details give the City Engineer the authority to require underdrain. Based on previously completed work in the area, a highwater table is likely to be encountered and underdrain may be required by the City Engineer if that is the case. It is best to design underdrain now.

Response: Based on the test pit data, we do not believe that groundwater will be an issue on this project.

bb. On the Elm Street Plan and Profile Sheet, a note shall be added depicting the 12-inch reclaim with 4-inch HMA on the profile view. The limits of this treatment in plan view shall also be shown, pursuant to Section 16.04 of the Subdivision Regulations.

Response: The Elm Street Plan and Profile views have been updated accordingly.

cc. On the Elm Street Plan and Profile Sheet, there appears to be a utility elevation conflict between the water and sanitary sewer at approximately STA 10+50, and shall be redesigned as necessary.

Response: The water main has been raised to avoid this conflict.

dd. On the Construction Details Sheet 11, a callout for the Pavement Overlay Transition detail shall be provided on the plan view.

Response: The detail has been revised accordingly.

ee. On the Construction Details Sheet 11, the City of Concord Detail M-1 Road Sign Post and Sleeve – Urban shall be replaced with City of Concord Detail M-2 Road Sign Post and Sleeve – Rural, or both details shall be provided.

Response: Both details have been provided.

ff. On the Construction Detail Sheet 12, on the Outlet Protection Apron Detail, cross out or remove the Apron with FES detail since it is not being used on site.

Response: The detail has been revised accordingly. .

gg. On the Construction Detail Sheet 12, as stated in Section 23.08(1) of the Subdivision Regulations and in the provided Stormwater Management Report, Project Narrative, Post Development Drainage Conditions Section, show on the Typical Stormwater Management (Infiltration) Basin Detail that the two basins on site manage the 100-year storm event. Currently, the detail shows the 50-year storm event overtopping the spillway.

Response: The detail has been revised accordingly.

hh. On the Construction Detail Sheet 13, a callout at the location in the plan view, of the cleanout shown in the Cleanouts on Service Detail shall be provided.

Response: A Cleanout label has been added to the detail accordingly.

ii. On the Construction Detail Sheet 13, the Primary Conduit Trench Detail shall be replaced, or meet or exceed the City of Concord Detail U-1.

Response: The detail has been replaced with the correct one accordingly.

jj. On the Construction Detail Sheet 13, a detail for the proposed transformer pad and utility riser, shown on Sheet 5, shall be provided.

Response: The details from Unitil have been added to the plan set on Sheet 14.

kk. On the Construction Detail Sheet 16, under Construction Sequence, Note 20, change 5 acres to 1 acre, and add a statement that no areas shall remain idle for more than 14 days without being stabilized, including stockpiles, pursuant to Section 28.05(2) of Subdivision Regulations.

Response: Note 20 has been revised accordingly and Note 21 has been added.

ll. On the Construction Detail Sheet 16, add a final stabilization note stating a site shall be deemed to be stabilized when it is in a condition in which the soils on the site will not erode under the conditions of a 10 year storm event, pursuant to Section 28.05(4).

Response: Note 20 has been added to the Erosion Control Notes.

mm. On the Construction Detail Sheet 16, the locations of the Filtrexx Sediment Control and Hay Bale Barrier shall be shown on Sheet 7, or remove these details from this sheet if they are not proposed in the project.

Response: These details have been removed as they aren't being proposed for this project. ***As an FYI, NHDES AoT typically requires these details to be shown on the plans even if they are not proposed.***

nn. In the Stormwater Management Plan, test pit information in the Test Pit Report is for SWMB #5, TP 1 and 2. However, there is no SWMB #5 on site. Also, the permeability test 1-3 on p. 2 appear to be for one test pit. Ensure the permeability tests and the Ksat calculations are shown for all 6 test pits. Show the locations of these test pits and the test pit information on Sheet 5, pursuant to CCSR 23.09(2).

Response: We are in the process of performing additional test pits on the site and we will update the Report and Plans when complete.

oo. In the Stormwater Management Plan, in the Project Narrative, Post-Development Drainage Conditions, Overview Section, it mentions SWMB #1 releases to a new overflow catch basin. However, the plans do not show an overflow spillway to direct flows to this catch basin. An overflow spillway shall be designed and shown on the plan, to prevent overloading of existing downstream facilities, pursuant to Section 23.08(3).

Response: An overflow spillway is not needed in this case. The SWMB is designed to infiltrate in excess of the 100-year storm event. Large volumes of runoff will pond up in the basin and spill into CB # 6, which serves as the emergency overflow structure.

3.36 The Fire Department reviewed the application and had the following compliance comments:

The distance from the proposed new public street and the closest hydrant on Elm St may exceed 800 feet, thus requiring a hydrant to be installed to meet Fire Code Chapter 18 Section 18.5.2 Detached One- and Two-Family Dwellings. Fire hydrants shall be provided for detached one- and two-family dwellings in accordance with both of the following: (1) The maximum distance to a fire hydrant from the closest point on the building shall not exceed 600 ft (183 m); and (2) The maximum distance between fire hydrants shall not exceed 800 ft (244 m).

Enhanced Content: Fire hydrants serving one- and two-family dwellings must be arranged so that the distance between each building and the nearest hydrant does not exceed 600 ft (183 m). Additional hydrants might be required to limit the distance between hydrants to not more than 800 ft (244 m) along the fire department access road as stated in 18.5.1.4. Only those hydrants within 1,000 ft (305 m) of a building are permitted to be given credit for supplying the building's required fire flow in accordance with 18.5.4.2. This criterion combined with the 600 ft (183 m) maximum building distance criterion might result in hydrants spaced less than 800 ft (244 m) apart.

The distance between fire hydrants is measured as how the fire apparatus would lay hose down the fire department access street to the subject building. The distance shall not be measured across adjacent lots, or through fences, gates, or other obstructions that would prevent the normal movement of a fire apparatus performing a hose lay to a fire hydrant.

Response: Stations have been added to the fire hydrant labels to prove that the distance between them would satisfy the criterion.

3.48 The Assessing Department reviewed the application and had no compliance comments other than removing the tax map lot numbers from the lot numbering.

Response: The tax map and lot numbers have been updated accordingly.

3.49 The General Services Department reviewed the application and provided the following compliance comments:

a. Show the test pit location on the grading and drainage plan.

   Response: Updated test pits are being performed and will be added to the plans.

b. Sanitary manhole structures shall have bituminous damp proof coating, pursuant to Section 4.02.J.2 of the Construction Standards and Details; and

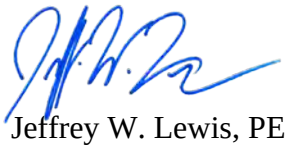
   Response: The Sanitary Sewer Manhole Detail on Sheet 16 has been modified to include a note stating the requirement for a damp proof coating.

c. Sanitary services shall have cleanouts installed at the right-of-way, pursuant to Section 4.03.B.15 of the Construction Standards and Details.

   Response: Cleanouts have been shown on the Grading & Drainage Plan and Note 5D has been updated.

Thank you for your consideration.

Sincerely,



Jeffrey W. Lewis, PE
Principal Engineer
Northpoint Engineering, LLC

STORMWATER MANAGEMENT REPORT

Prepared For

ZENDKO SUBDIVISION
TAX MAP 15P LOT 26-1
ELM STREET
CONCORD, NEW HAMPSHIRE

June 18, 2025

Prepared for:

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Project No. 25019

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I. PROJECT NARRATIVE

Project Description

Existing Property:

The subject lot is located on the north side of Elm Street, approximately 2,000-feet to the west of Chandler Street. It is 13.4051-acres in total size and it staddles the municipal boundary line with the Town of Boscawen. The portion of the lot located within the City of Concord (Map 15 P Lot 16-1) is the subject of the proposed subdivision, and is referred to herein as the subject parcel.

The subject parcel is 12.54-acres in size and has over 800-feet of frontage on Elm Street. There is a small pond that is entirely located within the subject parcel. The portion of the property to the east of the pond exists as an open meadow with very flat terrain and well-drained soils, making it very suitable for development. The westerly portion of the parcel is wooded and contains the pond, adjacent wetland areas, and is predominantly comprised of steep slopes, making it much less suitable for development. Aside from a very small cemetery that lies adjacent to Elm Street near the pond, the subject parcel is entirely undeveloped.

Adjacent land uses include existing single-family houses along the Elm Street corridor to the east, south and west in Concord. To the north, the parcel is adjacent to undeveloped parcels located within the Town of Boscawen.

Proposed Subdivision:

The proposed project involves a new residential subdivision that will create 5 new single-family house lots and leave a large portion of the parent tract intact for future development. A new municipal cul-de-sac will be constructed off the north side of Elm Street to provide access and utilities to the 5 new lots. The proposed cul-de-sac is approximately 300-feet long and will have a 26-foot pavement width with vertical granite curb on both sides. It will have a closed drainage system and two separate onsite stormwater management basins located within municipal drainage easements. A future right-of-way easement will be dedicated off the end of the cul-de-sac that extends to the parent tract. This will allow for future access and future extension of utilities to the remaining parcel.

The five new lots will all meet the minimum size criteria of the Zoning Ordinance for single-family lots with sewer in the RM-district. The minimum lot size is 12,500-sf with 100-feet of frontage.

Methodology

In accordance with the provisions and requirements of the City of Concord Site Plan Regulations the 2, 10, 25 and 100-year, (24-hour) return frequency storms were used in all aspects of analysis and design for stormwater management improvements at the subject site, as further documented in this report.

The methodology of the U.S.D.A–S.C.S publication Urban Hydrology for Small Watersheds – Technical Release No. 55 (TR-55) and Computer Program – Project Formulation Hydrology (TR-20) was selected for use in the design of segments of the drainage system in order to estimate peak stormwater discharge

volumes. In implementing the methodology of TR-55 and TR-20 a HYDROCAD (Version 10.00) stormwater modeling, hydrograph generating, and routing computer program was utilized.

Estimates for Time of Concentration, used in the analysis were made using the methodology contained within U.S.D.A–S.C.S publication Urban Hydrology for Small Watersheds – Technical Release No. 55 (TR-55). In implementing the TR-55 Method, a minimum Time of Concentration of 2 minutes was utilized for urbanized areas.

All design and analysis calculations performed using the referenced methodologies are attached to this report. These calculations document the subcatchment area, breakdown of surface type, time of concentration, rainfall intensity, peak discharge volume, peak velocity, and other descriptive design data for each watershed and pipe segment evaluated. In addition, the attached "Drainage Areas Plans" graphically define and illustrate the real extent of each watershed or subcatchment area investigated.

Existing Drainage Conditions

The proposed subdivision is located within the existing meadow on the east side of the subject parcel. Therefore, this drainage analysis is focused on the existing meadow which is the portion of the subject parcel that lies to the east of the existing pond. The meadow is very flat with average grades around 1-percent. There are very few trees on the parcel as it exists almost entirely as an undeveloped, open meadow. Based on soils data from the NRCS Web Soil Survey, the area of the proposed subdivision is comprised predominantly of Boscawen fine sandy loam (220B). This is a well-drained, HSG "A" soil type.

The frontage along the north side of Elm Street includes a shallow roadside ditch that collects runoff from Elm Street as well as from the front portion of the subject parcel, identified as Subcatchment 10S in the analysis. There is an existing catch basin within the ditch along the frontage that collects runoff form this subcatchment and discharges it through a stormdrain culvert to the downstream parcel on the south side of Elm Street. The flow being discharged to this culvert is identified in the analysis as Point of Comparison #1 (POC #1).

Subcatchment 20S is the northeast area of the parcel that drains towards a shallow depression at the northeast corned of the parcel. Runoff from this area discharges the site at the northeast corner which has been identified as POC#2.

Subcatchment 30S is the westerly portion of the meadow that sheet drains directly to the existing pond. The pond has been identified as POC#3.

Post-Development Drainage Conditions

Overview:

The proposed project involves the easterly 3.15-acres of the site which will be subdivided into the five new lots and the new cul-de-sac. The new road will be paved and will have vertical granite curbing along with a closed drainage system comprised of catch basin, drain manholes, and stormdrain culverts. The road grading has been designed to mimic the existing drainage pattern of the site, with the front portion of the road draining towards Elm Street and the rear portion draining towards the northwest corner.

In order to treat and mitigate the stormwater runoff from the subdivision, two separate stormwater management basins (SWMB's) will be constructed onsite. Both SWMB's are designed as surface infiltration basins designed to take advantage of the well-drained soil that exists on the parcel.

SWMB#1 is located adjacent to Elm Street and will capture runoff from the southerly portion of the cul-de-sac as well as runoff from the two new corner lots. It is designed to infiltrate collected stormwater runoff from all storm events, up to and including the 100-year storm event. In the event that the basin exceeds capacity, a new overflow catch basin will be installed along the right-of-way to direct excess flows towards the existing culvert in Elm Street.

SWMB#2 is located at the northwest corner of the site and it similarly will collect and infiltrate stormwater runoff from all storm events, up to and including the 100-year storm event. It will collect runoff from the northerly portion of the cul-de-sac and the three lots accessed off the cul-de-sac. It is provided with an emergency spillway which will direct any excess flows to the existing shallow swale to the northeast.

The combination of the two SWMB'S will ensure that 100% of the roadway runoff is captured and treated, along with the majority of runoff from the five single-family house lots. For the purpose of this analysis, the post-developed HydroCAD model has taken into account the following proposed impervious surface areas:

- Proposed pavement and curbing for the full length of the cul-de-sac;
- Assumed 5,000-sf of impervious surface area per residential lot to account for driveways, houses and other structures;
- Potential future pavement and curb over the future right-of-way easement as extended to the property line;

Test Pits

Multiple Test pits were performed on the subject parcel over the past several years and are included in this report. Two were performed by Randall Shuey, CSS in April 2023 and four were performed by Andrew Seraikas, septic designer, in April 2025. Depths of test pits ranged from 5-feet to 8-feet. The estimated seasonal high water table (ESHWT) could not be identified in any of the test pits and is expected to be more than 8-feet below the existing ground elevation.

Design Infiltration Rate:

Based on published data from the *Ksat Values for New Hampshire Soils, Society of Soil Scientists of Northern New England, Special (SSSNNE) Publication No.5, September 2009,* Boscawen series soils have an expected hydraulic conductivity rate (Ksat) of between 6.0 and 20.0 inches per hour in the B-horizon and between 20 an 100 inches per hour in the C-Horizon. In order to confirm the expected Ksat, amoozemeter testing was performed within three separate test pits onsite. The average reading of the tests was 15.45 inches per hour. A conservative factor of safety was applied and a design infiltration rate of 3.00 inches per hour was utilized in the analysis.

Stormwater Treatment & Groundwater Recharge:

The two surface infiltration basins will provide both groundwater recharge and permanent stormwater treatment of the collected stormwater. The bottom of the infiltration basins will be more than 4-feet above the seasonal high groundwater elevation, as none was established in the test pits. Collected runoff from all design storm events will be fully infiltrated.

Pre-treatment of the collected stormwater will be through offline catch basins, each with limited drainage area. The sumps in the catch basins will capture and remove sediment from the runoff prior to release to the infiltration basins.

Peak Runoff Control:

The subdivision has been designed to provide peak runoff control requirements in accordance with the City of Concord Subdivision Regulations. The surface infiltration basins have been designed to control the peak discharge rates of runoff leaving the subdivided property to ensure that post development flow rates are equal to or less than pre-developed flow rates. The subdivision has been designed to ensure that the 2-year, 10-year, 25-year and 100-year 24-hour post-developed peak flow rates do not exceed the flow rates of the existing conditions, and to ensure that the 10-year post-developed volume of runoff does not exceed that of the pre-developed condition. See Tables in the Summary of Results below for actual values.

Summary of Results

Table 1. Peak Runoff Control Summary

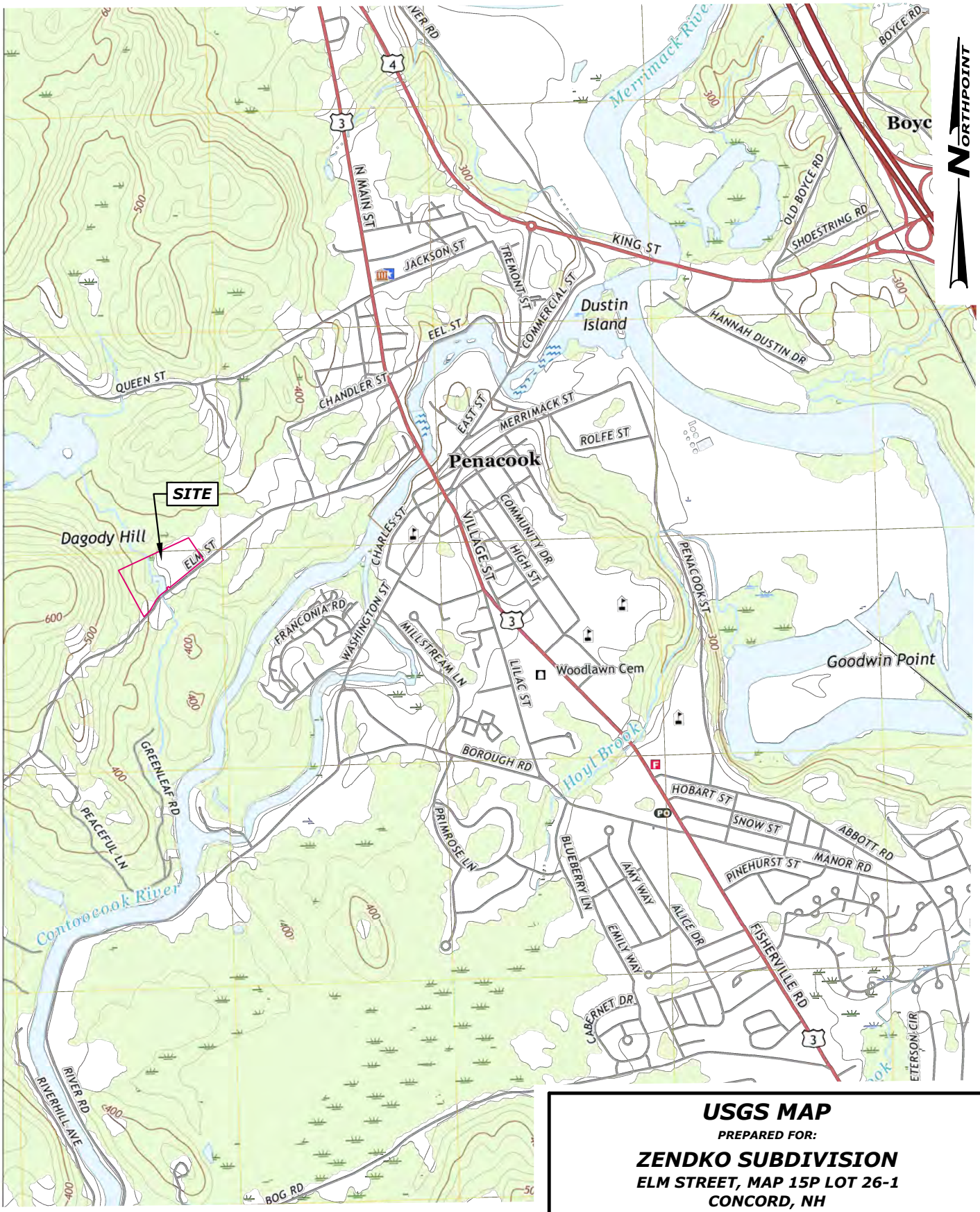
	Peak Rates of Runoff at POC							
	(2-Year, 24-Hour)		(10-Year, 24-Hour)		(25-Year, 24-Hour)		(100-Year, 24-Hour)	
POC (Node)	Pre	Post	Pre	Post	Pre	Post	Pre	Post
POC1 (R10)	0.00-cfs	0.00-cfs	0.05-cfs	0.00-cfs	0.25-cfs	0.00-cfs	1.42-cfs	0.00-cfs
POC1 (R20)	0.00-cfs	0.00-cfs	0.02-cfs	0.00-cfs	0.08-cfs	0.00-cfs	0.77-cfs	0.00-cfs
POC3 (R30)	0.00-cfs	0.00-cfs	0.02-cfs	0.02-cfs	0.08-cfs	0.08-cfs	0.79-cfs	0.79-cfs

Table 2. Runoff Volume Control Summary

	Runoff Volume at POC	
	(10-Year, 24-Hour)	
POC (Node)	Pre	Post
POC1 (R10)	1,256-cf	0-cf
POC1 (R20)	446-cf	0-cf
POC3 (R30)	470-cf	470-cf

II. USGS MAP EXHIBIT

FILE: G:_PROJECTS\25019\dwg\25019_Exhibits.dwg BY: Jamie DATE: 17 Jun 2025 - 2:43pm



USGS MAP

PREPARED FOR:

ZENDKO SUBDIVISION

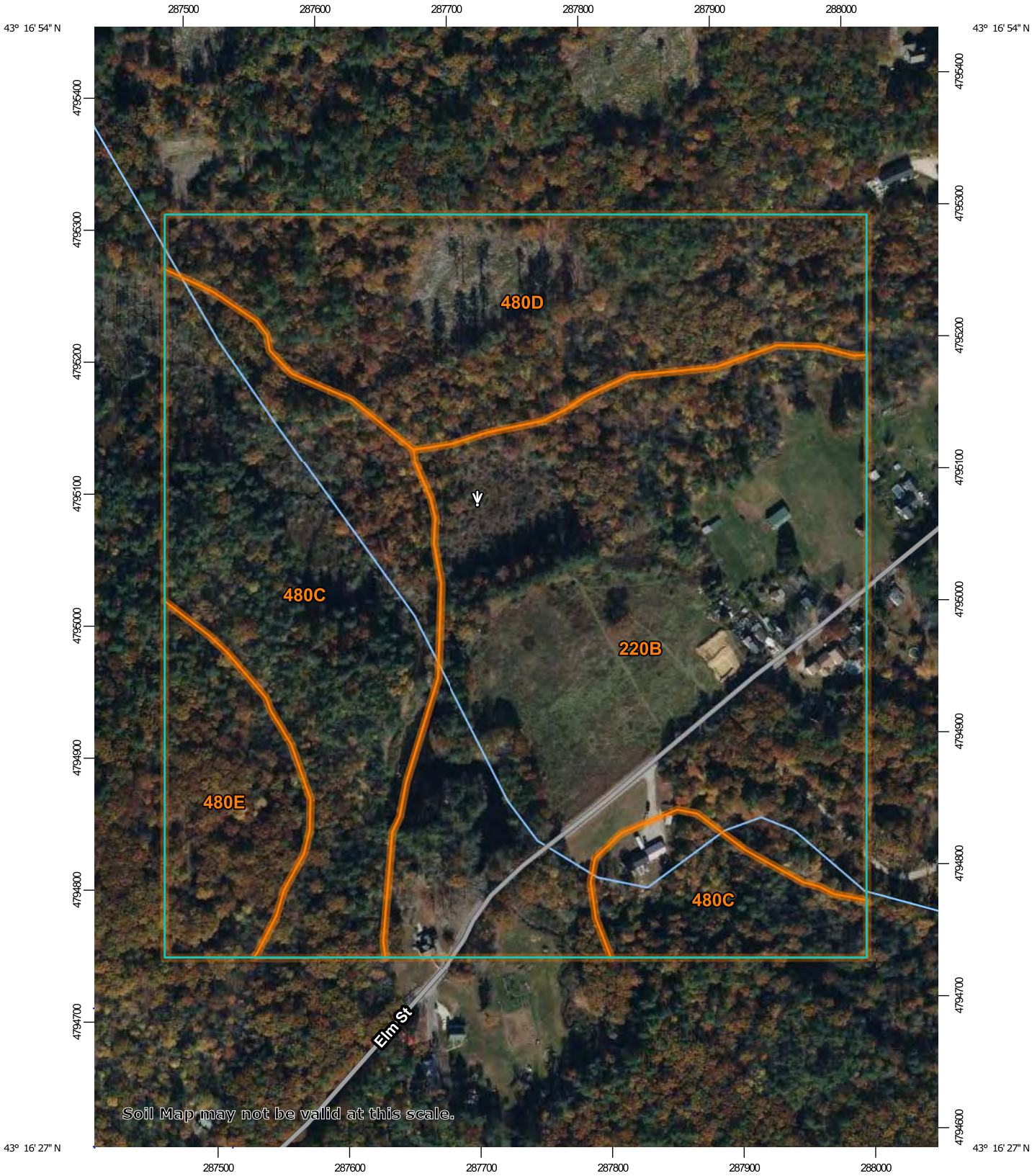
ELM STREET, MAP 15P LOT 26-1
CONCORD, NH

NORTHPOINT ENGINEERING, LLC
Civil Engineering ◢ Land Planning ◢ Construction Services

119 Storrs St, Ste 201
Concord, NH 03301
Tel 603-226-1166
Fax 603-226-1160
www.northpointeng.com

SCALE: 1" = 1000'	**DATE: JUN, 2025**
PROJ.: 25019	**SHEET: 1 OF 1**

III. Web Soil Survey Map



Map Scale: 1:4,130 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Merrimack and Belknap Counties, New Hampshire
Survey Area Data: Version 28, Sep 6, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 6, 2022—Oct 22, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
220B	Boscawen fine sandy loam, 3 to 8 percent slopes	32.6	43.7%
480C	Millsite-Woodstock-Henniker complex, 8 to 15 percent slopes, very stony	20.3	27.2%
480D	Millsite-Woodstock-Henniker complex, 15 to 25 percent slopes, very stony	16.3	21.8%
480E	Millsite-Woodstock-Henniker complex, 25 to 60 percent slopes, very stony	5.4	7.2%
Totals for Area of Interest		**74.5**	**100.0%**

IV. Aerial Photograph Exhibits

FILE: G:_PROJECTS\25019\dwg\25019_Exhibits.dwg BY: Jamie DATE: 17 Jun 2025 - 2:43pm

AERIAL VIEW

PREPARED FOR:

ZENDKO SUBDIVISION

ELM STREET, MAP 15P LOT 26-1
CONCORD, NH

NORTHPOINT ENGINEERING, LLC
Civil Engineering ◢ Land Planning ◢ Construction Services

119 Storrs St, Ste 201
Concord, NH 03301
Tel 603-226-1166
Fax 603-226-1160
www.northpointeng.com

SCALE: 1" = 500'	**DATE: JUN, 2025**
PROJ.: 25019	**SHEET: 1 OF 1**

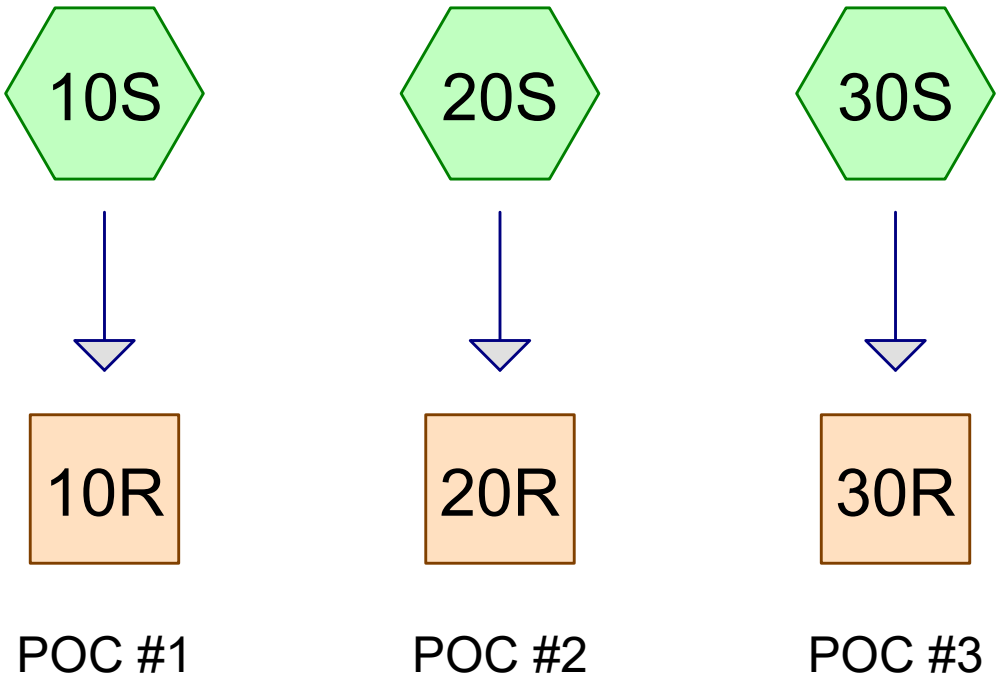
V. Drainage Analysis

- Extreme Precipitation Tables

- HydroCAD Output Data – Pre-Developed
    - Drainage Diagram
    - Area Listing and Soil Listing
    - Node List: 2-year, 10-year, 25-year, 100-year
    - Full Summary: 10-year

- HydroCAD Output Data – Post-Developed
    - Drainage Diagram
    - Area Listing and Soil Listing
    - Node List: 2-year, 10-year, 25-year, 100-year
    - Full Summary: 10-year

- Test Pit Analysis



Subcat Reach Pond Link

Routing Diagram for 25019_Pre-HydroCAD
Prepared by Northpoint Engineering, LLC, Printed 6/17/2025

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
5,671	98	Existing Impervious, HSG A (10S)
333,047	39	Pasture/grassland/range, Good, HSG A (10S, 20S, 30S)
338,718	**40**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
338,718	HSG A	10S, 20S, 30S
0	HSG B	
0	HSG C	
0	HSG D	
0	Other	
338,718		**TOTAL AREA**

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 10S: Runoff Area=133,139 sf 4.26% Impervious Runoff Depth=0.00"
Flow Length=419' Tc=29.9 min CN=42 Runoff=0.00 cfs 1 cf

Subcatchment 20S: Runoff Area=100,114 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=432' Tc=22.9 min CN=39 Runoff=0.00 cfs 0 cf

Subcatchment 30S: Runoff Area=105,465 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=322' Tc=25.4 min CN=39 Runoff=0.00 cfs 0 cf

Reach 10R: POC #1 Inflow=0.00 cfs 1 cf
Outflow=0.00 cfs 1 cf

Reach 20R: POC #2 Inflow=0.00 cfs 0 cf
Outflow=0.00 cfs 0 cf

Reach 30R: POC #3 Inflow=0.00 cfs 0 cf
Outflow=0.00 cfs 0 cf

Total Runoff Area = 338,718 sf Runoff Volume = 1 cf Average Runoff Depth = 0.00"
98.33% Pervious = 333,047 sf 1.67% Impervious = 5,671 sf

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 10S: Runoff Area=133,139 sf 4.26% Impervious Runoff Depth=0.11"
Flow Length=419' Tc=29.9 min CN=42 Runoff=0.05 cfs 1,256 cf

Subcatchment 20S: Runoff Area=100,114 sf 0.00% Impervious Runoff Depth=0.05"
Flow Length=432' Tc=22.9 min CN=39 Runoff=0.02 cfs 446 cf

Subcatchment 30S: Runoff Area=105,465 sf 0.00% Impervious Runoff Depth=0.05"
Flow Length=322' Tc=25.4 min CN=39 Runoff=0.02 cfs 470 cf

Reach 10R: POC #1 Inflow=0.05 cfs 1,256 cf
Outflow=0.05 cfs 1,256 cf

Reach 20R: POC #2 Inflow=0.02 cfs 446 cf
Outflow=0.02 cfs 446 cf

Reach 30R: POC #3 Inflow=0.02 cfs 470 cf
Outflow=0.02 cfs 470 cf

Total Runoff Area = 338,718 sf Runoff Volume = 2,172 cf Average Runoff Depth = 0.08"
98.33% Pervious = 333,047 sf 1.67% Impervious = 5,671 sf

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 10S: Runoff Area=133,139 sf 4.26% Impervious Runoff Depth=0.33"
Flow Length=419' Tc=29.9 min CN=42 Runoff=0.25 cfs 3,638 cf

Subcatchment 20S: Runoff Area=100,114 sf 0.00% Impervious Runoff Depth=0.21"
Flow Length=432' Tc=22.9 min CN=39 Runoff=0.08 cfs 1,772 cf

Subcatchment 30S: Runoff Area=105,465 sf 0.00% Impervious Runoff Depth=0.21"
Flow Length=322' Tc=25.4 min CN=39 Runoff=0.08 cfs 1,866 cf

Reach 10R: POC #1 Inflow=0.25 cfs 3,638 cf
Outflow=0.25 cfs 3,638 cf

Reach 20R: POC #2 Inflow=0.08 cfs 1,772 cf
Outflow=0.08 cfs 1,772 cf

Reach 30R: POC #3 Inflow=0.08 cfs 1,866 cf
Outflow=0.08 cfs 1,866 cf

Total Runoff Area = 338,718 sf Runoff Volume = 7,276 cf Average Runoff Depth = 0.26"
98.33% Pervious = 333,047 sf 1.67% Impervious = 5,671 sf

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 10S: Runoff Area=133,139 sf 4.26% Impervious Runoff Depth=1.01"
Flow Length=419' Tc=29.9 min CN=42 Runoff=1.42 cfs 11,180 cf

Subcatchment 20S: Runoff Area=100,114 sf 0.00% Impervious Runoff Depth=0.78"
Flow Length=432' Tc=22.9 min CN=39 Runoff=0.77 cfs 6,499 cf

Subcatchment 30S: Runoff Area=105,465 sf 0.00% Impervious Runoff Depth=0.78"
Flow Length=322' Tc=25.4 min CN=39 Runoff=0.79 cfs 6,847 cf

Reach 10R: POC #1 Inflow=1.42 cfs 11,180 cf
Outflow=1.42 cfs 11,180 cf

Reach 20R: POC #2 Inflow=0.77 cfs 6,499 cf
Outflow=0.77 cfs 6,499 cf

Reach 30R: POC #3 Inflow=0.79 cfs 6,847 cf
Outflow=0.79 cfs 6,847 cf

Total Runoff Area = 338,718 sf Runoff Volume = 24,526 cf Average Runoff Depth = 0.87"
98.33% Pervious = 333,047 sf 1.67% Impervious = 5,671 sf

Summary for Subcatchment 10S:

Runoff = 0.05 cfs @ 14.92 hrs, Volume= 1,256 cf, Depth= 0.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=4.07"

	Area (sf)	CN	Description
	127,468	39	Pasture/grassland/range, Good, HSG A
*	5,671	98	Existing Impervious, HSG A
	133,139	42	Weighted Average
	127,468		95.74% Pervious Area
	5,671		4.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.2	100	0.0100	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.79"
9.7	319	0.0061	0.55		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
29.9	419	Total			

Summary for Subcatchment 20S:

Runoff = 0.02 cfs @ 15.65 hrs, Volume= 446 cf, Depth= 0.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=4.07"

Area (sf)	CN	Description
100,114	39	Pasture/grassland/range, Good, HSG A
100,114		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.1	100	0.0150	0.10		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.79"
5.5	290	0.0155	0.87		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	42	0.0950	2.16		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
22.9	432	Total			

Summary for Subcatchment 30S:

Runoff = 0.02 cfs @ 15.72 hrs, Volume= 470 cf, Depth= 0.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=4.07"

Area (sf)	CN	Description
105,465	39	Pasture/grassland/range, Good, HSG A
105,465		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.2	100	0.0100	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.79"
4.9	163	0.0062	0.55		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	59	0.2711	3.64		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
25.4	322	Total			

Summary for Reach 10R: POC #1

Inflow Area = 133,139 sf, 4.26% Impervious, Inflow Depth = 0.11" for 10-YR event
Inflow = 0.05 cfs @ 14.92 hrs, Volume= 1,256 cf
Outflow = 0.05 cfs @ 14.92 hrs, Volume= 1,256 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Summary for Reach 20R: POC #2

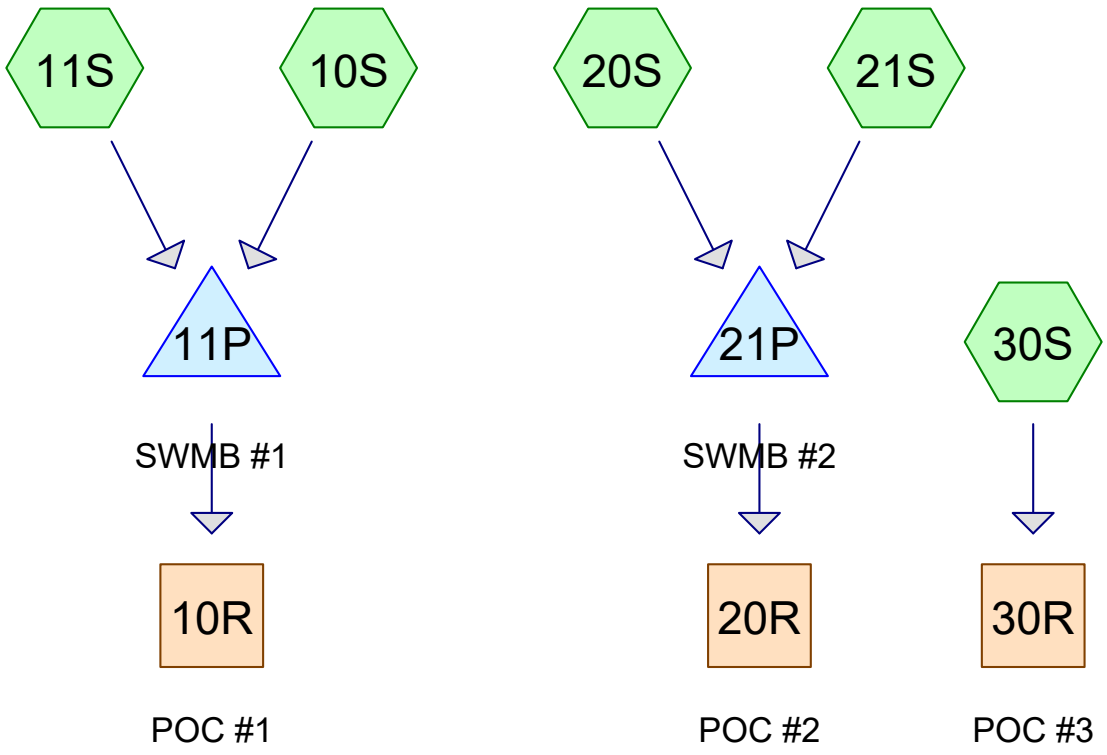
Inflow Area = 100,114 sf, 0.00% Impervious, Inflow Depth = 0.05" for 10-YR event
Inflow = 0.02 cfs @ 15.65 hrs, Volume= 446 cf
Outflow = 0.02 cfs @ 15.65 hrs, Volume= 446 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Summary for Reach 30R: POC #3

Inflow Area = 105,465 sf, 0.00% Impervious, Inflow Depth = 0.05" for 10-YR event
Inflow = 0.02 cfs @ 15.72 hrs, Volume= 470 cf
Outflow = 0.02 cfs @ 15.72 hrs, Volume= 470 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs



Subcat Reach Pond Link

Routing Diagram for 25019_Post-HydroCAD
Prepared by Northpoint Engineering, LLC, Printed 6/17/2025

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
5,671	98	Existing Impervious, HSG A (10S, 11S)
50,000	39	Lawn, Good, HSG A (10S, 20S, 21S)
243,634	39	Pasture/grassland/range, Good, HSG A (10S, 11S, 20S, 30S)
39,413	98	Proposed Impervious, HSG A (10S, 20S, 21S)
338,718	**47**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
338,718	HSG A	10S, 11S, 20S, 21S, 30S
0	HSG B	
0	HSG C	
0	HSG D	
0	Other	
338,718		**TOTAL AREA**

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment10S: Runoff Area=46,229 sf 38.77% Impervious Runoff Depth=0.32"
Tc=5.0 min CN=62 Runoff=0.21 cfs 1,225 cf

Subcatchment11S: Runoff Area=54,412 sf 4.44% Impervious Runoff Depth=0.00"
Flow Length=311' Tc=27.5 min CN=42 Runoff=0.00 cfs 0 cf

Subcatchment20S: Runoff Area=85,868 sf 2.33% Impervious Runoff Depth=0.00"
Flow Length=320' Tc=20.8 min CN=40 Runoff=0.00 cfs 0 cf

Subcatchment21S: Runoff Area=46,744 sf 48.66% Impervious Runoff Depth=0.52"
Tc=5.0 min CN=68 Runoff=0.53 cfs 2,031 cf

Subcatchment30S: Runoff Area=105,465 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=322' Tc=25.4 min CN=39 Runoff=0.00 cfs 0 cf

Reach 10R: POC #1 Inflow=0.00 cfs 0 cf
Outflow=0.00 cfs 0 cf

Reach 20R: POC #2 Inflow=0.00 cfs 0 cf
Outflow=0.00 cfs 0 cf

Reach 30R: POC #3 Inflow=0.00 cfs 0 cf
Outflow=0.00 cfs 0 cf

Pond 11P: SWMB #1 Peak Elev=388.07' Storage=104 cf Inflow=0.21 cfs 1,225 cf
Outflow=0.10 cfs 1,226 cf

Pond 21P: SWMB #2 Peak Elev=386.06' Storage=201 cf Inflow=0.53 cfs 2,031 cf
Discarded=0.23 cfs 2,034 cf Primary=0.00 cfs 0 cf Outflow=0.23 cfs 2,034 cf

Total Runoff Area = 338,718 sf Runoff Volume = 3,257 cf Average Runoff Depth = 0.12"
86.69% Pervious = 293,634 sf 13.31% Impervious = 45,084 sf

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment10S: Runoff Area=46,229 sf 38.77% Impervious Runoff Depth=0.90"
Tc=5.0 min CN=62 Runoff=0.98 cfs 3,473 cf

Subcatchment11S: Runoff Area=54,412 sf 4.44% Impervious Runoff Depth=0.11"
Flow Length=311' Tc=27.5 min CN=42 Runoff=0.02 cfs 513 cf

Subcatchment20S: Runoff Area=85,868 sf 2.33% Impervious Runoff Depth=0.07"
Flow Length=320' Tc=20.8 min CN=40 Runoff=0.02 cfs 510 cf

Subcatchment21S: Runoff Area=46,744 sf 48.66% Impervious Runoff Depth=1.25"
Tc=5.0 min CN=68 Runoff=1.53 cfs 4,867 cf

Subcatchment30S: Runoff Area=105,465 sf 0.00% Impervious Runoff Depth=0.05"
Flow Length=322' Tc=25.4 min CN=39 Runoff=0.02 cfs 470 cf

Reach 10R: POC #1 Inflow=0.00 cfs 0 cf
Outflow=0.00 cfs 0 cf

Reach 20R: POC #2 Inflow=0.00 cfs 0 cf
Outflow=0.00 cfs 0 cf

Reach 30R: POC #3 Inflow=0.02 cfs 470 cf
Outflow=0.02 cfs 470 cf

Pond 11P: SWMB #1 Peak Elev=388.66' Storage=1,073 cf Inflow=0.98 cfs 3,986 cf
Outflow=0.13 cfs 3,987 cf

Pond 21P: SWMB #2 Peak Elev=386.39' Storage=1,324 cf Inflow=1.53 cfs 5,377 cf
Discarded=0.25 cfs 5,378 cf Primary=0.00 cfs 0 cf Outflow=0.25 cfs 5,378 cf

Total Runoff Area = 338,718 sf Runoff Volume = 9,833 cf Average Runoff Depth = 0.35"
86.69% Pervious = 293,634 sf 13.31% Impervious = 45,084 sf

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment10S: Runoff Area=46,229 sf 38.77% Impervious Runoff Depth=1.48"
Tc=5.0 min CN=62 Runoff=1.76 cfs 5,684 cf

Subcatchment11S: Runoff Area=54,412 sf 4.44% Impervious Runoff Depth=0.33"
Flow Length=311' Tc=27.5 min CN=42 Runoff=0.11 cfs 1,487 cf

Subcatchment20S: Runoff Area=85,868 sf 2.33% Impervious Runoff Depth=0.25"
Flow Length=320' Tc=20.8 min CN=40 Runoff=0.10 cfs 1,780 cf

Subcatchment21S: Runoff Area=46,744 sf 48.66% Impervious Runoff Depth=1.92"
Tc=5.0 min CN=68 Runoff=2.44 cfs 7,488 cf

Subcatchment30S: Runoff Area=105,465 sf 0.00% Impervious Runoff Depth=0.21"
Flow Length=322' Tc=25.4 min CN=39 Runoff=0.08 cfs 1,866 cf

Reach 10R: POC #1 Inflow=0.00 cfs 0 cf
Outflow=0.00 cfs 0 cf

Reach 20R: POC #2 Inflow=0.00 cfs 0 cf
Outflow=0.00 cfs 0 cf

Reach 30R: POC #3 Inflow=0.08 cfs 1,866 cf
Outflow=0.08 cfs 1,866 cf

Pond 11P: SWMB #1 Peak Elev=389.44' Storage=2,722 cf Inflow=1.76 cfs 7,171 cf
Outflow=0.17 cfs 7,172 cf

Pond 21P: SWMB #2 Peak Elev=386.79' Storage=2,849 cf Inflow=2.44 cfs 9,268 cf
Discarded=0.28 cfs 9,269 cf Primary=0.00 cfs 0 cf Outflow=0.28 cfs 9,269 cf

Total Runoff Area = 338,718 sf Runoff Volume = 18,306 cf Average Runoff Depth = 0.65"
86.69% Pervious = 293,634 sf 13.31% Impervious = 45,084 sf

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment10S: Runoff Area=46,229 sf 38.77% Impervious Runoff Depth=2.82"
Tc=5.0 min CN=62 Runoff=3.57 cfs 10,876 cf

Subcatchment11S: Runoff Area=54,412 sf 4.44% Impervious Runoff Depth=1.01"
Flow Length=311' Tc=27.5 min CN=42 Runoff=0.60 cfs 4,569 cf

Subcatchment20S: Runoff Area=85,868 sf 2.33% Impervious Runoff Depth=0.85"
Flow Length=320' Tc=20.8 min CN=40 Runoff=0.79 cfs 6,107 cf

Subcatchment21S: Runoff Area=46,744 sf 48.66% Impervious Runoff Depth=3.43"
Tc=5.0 min CN=68 Runoff=4.47 cfs 13,378 cf

Subcatchment30S: Runoff Area=105,465 sf 0.00% Impervious Runoff Depth=0.78"
Flow Length=322' Tc=25.4 min CN=39 Runoff=0.79 cfs 6,847 cf

Reach 10R: POC #1 Inflow=0.00 cfs 0 cf
Outflow=0.00 cfs 0 cf

Reach 20R: POC #2 Inflow=0.00 cfs 0 cf
Outflow=0.00 cfs 0 cf

Reach 30R: POC #3 Inflow=0.79 cfs 6,847 cf
Outflow=0.79 cfs 6,847 cf

Pond 11P: SWMB #1 Peak Elev=391.10' Storage=7,733 cf Inflow=3.60 cfs 15,445 cf
Outflow=0.26 cfs 15,446 cf

Pond 21P: SWMB #2 Peak Elev=388.04' Storage=8,642 cf Inflow=4.51 cfs 19,485 cf
Discarded=0.37 cfs 19,487 cf Primary=0.00 cfs 0 cf Outflow=0.37 cfs 19,487 cf

Total Runoff Area = 338,718 sf Runoff Volume = 41,777 cf Average Runoff Depth = 1.48"
86.69% Pervious = 293,634 sf 13.31% Impervious = 45,084 sf

Summary for Subcatchment 10S:

Runoff = 0.98 cfs @ 12.09 hrs, Volume= 3,473 cf, Depth= 0.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=4.07"

	Area (sf)	CN	Description
	8,305	39	Pasture/grassland/range, Good, HSG A
*	3,255	98	Existing Impervious, HSG A
*	20,000	39	Lawn, Good, HSG A
*	14,669	98	Proposed Impervious, HSG A
	46,229	62	Weighted Average
	28,305		61.23% Pervious Area
	17,924		38.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 11S:

Runoff = 0.02 cfs @ 14.88 hrs, Volume= 513 cf, Depth= 0.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=4.07"

	Area (sf)	CN	Description
	51,996	39	Pasture/grassland/range, Good, HSG A
*	2,416	98	Existing Impervious, HSG A
	54,412	42	Weighted Average
	51,996		95.56% Pervious Area
	2,416		4.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.2	100	0.0100	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.79"
7.3	211	0.0047	0.48		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
27.5	311	Total			

Summary for Subcatchment 20S:

Runoff = 0.02 cfs @ 15.32 hrs, Volume= 510 cf, Depth= 0.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=4.07"

	Area (sf)	CN	Description
	77,868	39	Pasture/grassland/range, Good, HSG A
*	6,000	39	Lawn, Good, HSG A
*	2,000	98	Proposed Impervious, HSG A
	85,868	40	Weighted Average
	83,868		97.67% Pervious Area
	2,000		2.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.1	100	0.0150	0.10		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.79"
3.7	220	0.0204	1.00		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.8	320	Total			

Summary for Subcatchment 21S:

Runoff = 1.53 cfs @ 12.08 hrs, Volume= 4,867 cf, Depth= 1.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=4.07"

	Area (sf)	CN	Description
*	24,000	39	Lawn, Good, HSG A
*	22,744	98	Proposed Impervious, HSG A
	46,744	68	Weighted Average
	24,000		51.34% Pervious Area
	22,744		48.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 30S:

Runoff = 0.02 cfs @ 15.72 hrs, Volume= 470 cf, Depth= 0.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=4.07"

Area (sf)	CN	Description
105,465	39	Pasture/grassland/range, Good, HSG A
105,465		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.2	100	0.0100	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.79"
4.9	163	0.0062	0.55		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	59	0.2711	3.64		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
25.4	322	Total			

Summary for Reach 10R: POC #1

Inflow Area = 100,641 sf, 20.21% Impervious, Inflow Depth = 0.00" for 10-YR event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Summary for Reach 20R: POC #2

Inflow Area = 132,612 sf, 18.66% Impervious, Inflow Depth = 0.00" for 10-YR event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Summary for Reach 30R: POC #3

Inflow Area = 105,465 sf, 0.00% Impervious, Inflow Depth = 0.05" for 10-YR event
Inflow = 0.02 cfs @ 15.72 hrs, Volume= 470 cf
Outflow = 0.02 cfs @ 15.72 hrs, Volume= 470 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Summary for Pond 11P: SWMB #1

Inflow Area = 100,641 sf, 20.21% Impervious, Inflow Depth = 0.48" for 10-YR event
Inflow = 0.98 cfs @ 12.09 hrs, Volume= 3,986 cf
Outflow = 0.13 cfs @ 13.61 hrs, Volume= 3,987 cf, Atten= 87%, Lag= 91.1 min
Discarded = 0.13 cfs @ 13.61 hrs, Volume= 3,987 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Peak Elev= 388.66' @ 13.61 hrs Surf.Area= 1,856 sf Storage= 1,073 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 83.2 min (990.4 - 907.2)

Volume	Invert	Avail.Storage	Storage Description
#1	388.00'	11,375 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
388.00	1,405	0	0
390.00	2,776	4,181	4,181
392.00	4,418	7,194	11,375

Device	Routing	Invert	Outlet Devices
#1	Discarded	388.00'	**3.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.13 cfs @ 13.61 hrs HW=388.66' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.13 cfs)

Summary for Pond 21P: SWMB #2

Inflow Area = 132,612 sf, 18.66% Impervious, Inflow Depth = 0.49" for 10-YR event
Inflow = 1.53 cfs @ 12.08 hrs, Volume= 5,377 cf
Outflow = 0.25 cfs @ 12.65 hrs, Volume= 5,378 cf, Atten= 84%, Lag= 33.8 min
Discarded = 0.25 cfs @ 12.65 hrs, Volume= 5,378 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Peak Elev= 386.39' @ 12.65 hrs Surf.Area= 3,614 sf Storage= 1,324 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 37.1 min (923.7 - 886.7)

Volume	Invert	Avail.Storage	Storage Description
#1	386.00'	21,214 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
386.00	3,228	0	0
388.00	5,220	8,448	8,448
390.00	7,546	12,766	21,214

Device	Routing	Invert	Outlet Devices
#1	Discarded	386.00'	**3.000 in/hr Exfiltration over Surface area**
#2	Primary	389.00'	**8.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.25 cfs @ 12.65 hrs HW=386.39' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.25 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=386.00' TW=0.00' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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TEST PIT REPORT
Boucher Property
Elm Street, Concord, NH

Site description

The site is an open mowed field. The site is level. Based on the test pits, soils within the field are classified as Boscawen, somewhat excessively drained glaciofluvial.

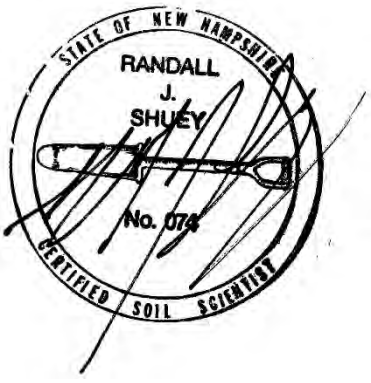
INSPECTOR – RANDALL SHUEY, NH CSS#74, NHDES DISIGNER #843

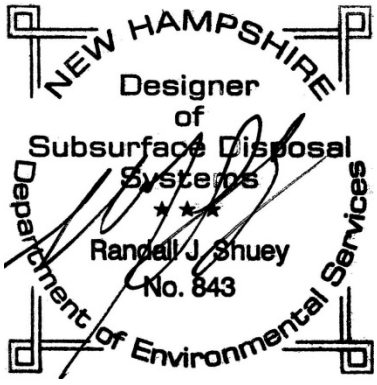
TEST PIT 1- April 10, 2023

DEPTH	HORIZON	COLOR	TEXTURE	CONSISTENCY / STRUCTURE	COMMENTS
0-10”	Ap	10YR 3/2	Loamy Sand	Granular, Friable	
10-16”	Bw	7.5YR 4/4	Med-Coars Sand with 15% fine gravel	Loose, Single Grained	
16-26”	C1	10YR 5/6	Sand and Sand and gravel Lenses	Loose Single Grained	
26-40”	C2	2.5Y 5/4	Fine to Medium Sand	Loose, Single Grained	
40-96”	C3	2.5Y 5/4	Medium Sand	Loose, Single Grained	

SHWT – None to 96”
Observed Water – None
Bedrock – None to 96”
Restrictive Layer – None

Test Pit 2-
Similar to 1
Bottom of Observation – 84”
SWHT – None to 84”
No Restrictions or Bedrock to 84”



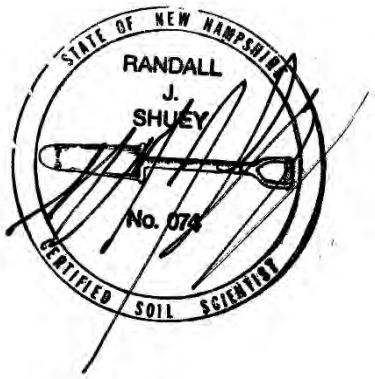


Permeameter Testing

The Compact Constant Head Permeameter (Amoozemeter) was used to determine Infiltration rates (Ksat) in the area of Test Pits 1 and 2. The results are in the table below

SWMB # AND TEST PIT #	Permeability Test	V - Drop in Water Level (cm)	A - Outflow Chamber (cm2)	Elapes Time (min/hr)	Outflow Q = AxV	Coeff A	Ksat = Q* coeff A (cm/hr)	Ksat (in/hour)
SWMB 5 TP 1 &2	1	5	105	0.017	31437.13	0.001163	36.5614	14.39
	2	5.2	105	0.017	32694.61	0.001163	38.0238	14.97
	3	5.9	105	0.017	37095.81	0.001163	43.1424	16.99
								15.45

The testing was done at around 46” and the average result for the 3 tests was 15.45 inches per hour.



Beaver Brook Planning & Design, LLC
Wetland Delineation / Site Assessments
Septic System Design / Wetland Mitigation / Landscape Design

Test Pit Log

Map 15P Lot 26-1
Elm Street, Concord, NH
April 9, 2025

Prepared for: Zendko L.L.C.
4 High Street, Suite 201
North Andover, MA 01845

Prepared By: Andrew Seraikas (Designer #1885)
Beaver Brook Planning and Design, L.L.C.
PO Box 2272, Concord NH 03302

Test Pit 1

Depth	Color	Soil Description
0-12”	10YR3/3	Fine Sandy Loam, Weak Granular, Very Friable
12-26”	10YR4/6	Fine Loamy Sand, Weak Granular, Very Friable
26-36”	2.5Y5/6	Gravelly Sand, Single Grain, Loose
36-39”	10YR5/8	Coarse Gravelly Sand, Single Grain, Loose
39-64”	2.5Y6/4	Fine Sand, Single Grain, Loose

Seasonal High Water Table = Not Observed
Depth To Ledge = None Observed at 64”
Perc Rate = 2 MIN/IN

Test Pit 2

Depth	Color	Soil Description
0-12”	10YR3/3	Fine Sandy Loam, Weak Granular, Very Friable
12-23”	10YR4/6	Gravelly Loamy Sand, Single Grain, Loose
23-26”	2.5Y6/4	Fine Sand, Single Grain, Loose
26-56”	10YR5/8	Coarse Gravelly Sand, Single Grain, Loose
56-72”	2.5Y6/4	Coarse Medium Sand, Single Grain, Loose

Seasonal High Water Table = Not Observed
Depth To Ledge= None Observed at 72”
Perc Rate = 4 MIN/IN

Beaver Brook Planning & Design, LLC
Wetland Delineation / Site Assessments
Septic System Design / Wetland Mitigation / Landscape Design

Test Pit 3

Depth	Color	Soil Description
0-11”	10YR3/3	Fine Sandy Loam, Weak Granular, Very Friable
11-20”	10YR4/6	Fine Loamy Sand, Weak Granular, Very Friable
20-30”	2.5Y5/6	Coarse Sand, Single Grain, Loose
30-52”	10YR5/8	Coarse Gravelly Sand, Single Grain, Loose
52-56”	2.5Y5/4	Very Fine Loamy Sand, Weak Granular, Very Friable
56-70”	2.5Y5/6	Coarse Sand, Single Grain, Loose

Seasonal High Water Table = Not Observed
Depth To Ledge= None Observed at 70”
Perc Rate = 2 MIN/IN

Test Pit 4

Depth	Color	Soil Description
0-14”	10YR3/3	Fine Sandy Loam, Weak Granular, Very Friable
14-20”	10YR4/6	Fine Loamy Sand, Weak Granular, Very Friable
20-24”	2.5Y5/4	Very Fine Loamy Sand, Weak Granular, Very Friable
24-36”	2.5Y6/4	Fine Sand, Single Grain, Loose
36-40”	10YR5/8	Coarse Gravelly Sand, Single Grain, Loose
40-48”	2.5Y6/4	Fine Sand, Single Grain, Loose
48-68”	2.5Y6/4	Coarse Sand, Single Grain, Loose

Seasonal High Water Table = Not Observed
Depth To Ledge= None Observed at 68”
Perc Rate = 4 MIN/IN

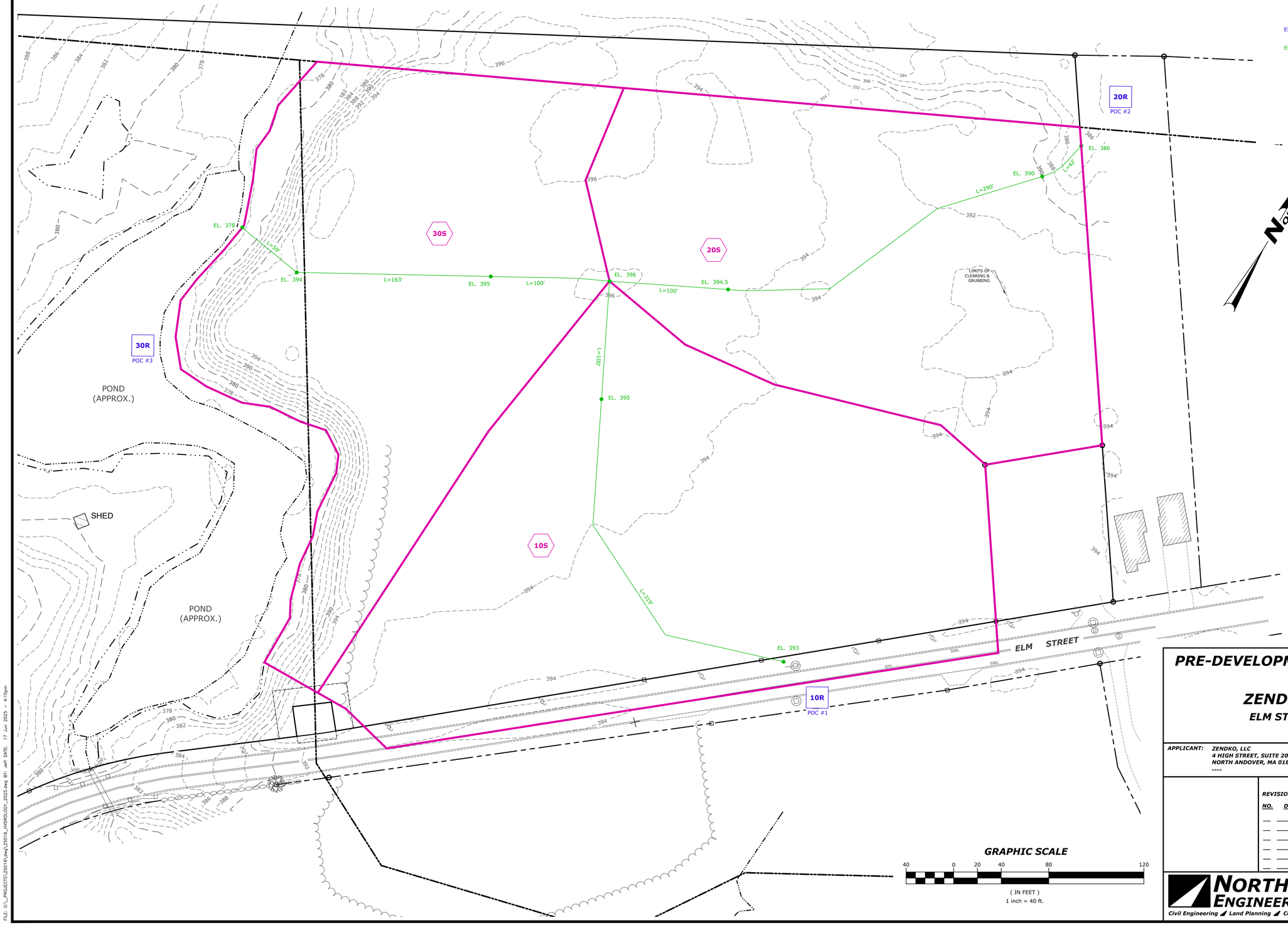
VI. Drainage Area Plans

- Pre-Developed Drainage Area Plan
- Post-Developed Drainage Area Plan

PRE-DRAINAGE LEGEND:

THIS LEGEND REFLECTS THE HYDROCAD MODEL USED FOR DRAINAGE CALCULATIONS.

- 1S — MODELED AS EXISTING SUBCATCHMENT
- SUBCATCHMENT BOUNDARIES
- EL. R1 R=XX' EL. — REACH PATH
- EL. L=XX' EL. — TIME OF CONCENTRATION
- 1R — REACH
- 1P — POND



GRAPHIC SCALE

40 0 20 40 80 120

(IN FEET)
1 inch = 40 ft.

PRE-DEVELOPMENT DRAINAGE AREA MAP

PREPARED FOR:

ZENDKO SUBDIVISION

ELM STREET, MAP 15P LOT 26-1
CONCORD, NH

APPLICANT: ZENDKO, LLC 4 HIGH STREET, SUITE 201 NORTH ANDOVER, MA 01845 ----	OWNER: MARK BOUCHER 126 ELM STREET PENACOOK, NH 03303

REVISIONS:

NO.	DATE	DESCRIPTION

NORTHPOINT ENGINEERING, LLC
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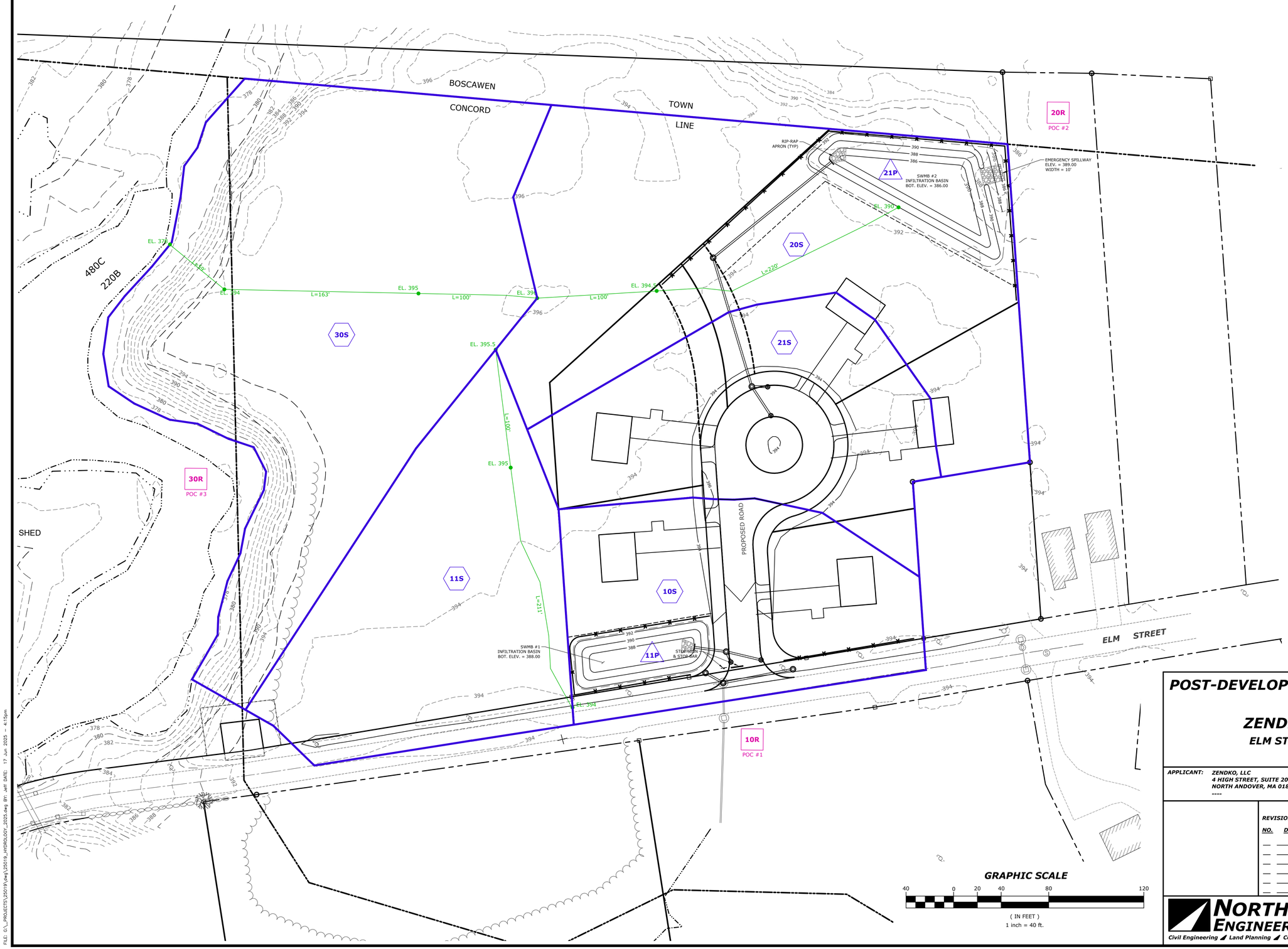
DATE: JUN, 2025
PROJ.: 25019
SCALE: 1"=40'
SHEET: 1 OF 1



POST-DRAINAGE LEGEND:

THIS LEGEND REFLECTS THE HYDROCAD MODEL USED FOR DRAINAGE CALCULATIONS.

- 1S — MODELED AS PROPOSED SUBCATCHMENT
- SUBCATCHMENT BOUNDARIES
- EL. — R1 R=XX' — EL. — REACH PATH
- EL. — L=XX' — EL. — TIME OF CONCENTRATION
- 1R — REACH
- 1P — POND

GRAPHIC SCALE

40 0 20 40 80 120

(IN FEET)

1 inch = 40 ft.

POST-DEVELOPMENT DRAINAGE AREA MAP

PREPARED FOR:

ZENDKO SUBDIVISION

ELM STREET, MAP 15P LOT 26-1
CONCORD, NH

APPLICANT:	OWNER:
ZENDKO, LLC 4 HIGH STREET, SUITE 201 NORTH ANDOVER, MA 01845 ----	MARK BOUCHER 126 ELM STREET PENACOOK, NH 03303

REVISIONS:

NO.	DATE	DESCRIPTION

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DATE: JUN, 2025
PROJ.: 25019
SCALE: 1"=40'
SHEET: 1 OF 1

FILE: G:_PROJECTS\25019\dwg\25019_HYDROLOGY_2025.dwg BY: Jeff DATE: 17 Jun 2025 - 4:15pm